

FURTHER NOTES ON AUSTRALIAN COLEOPTERA, WITH
 DESCRIPTIONS OF NEW GENERA AND SPECIES.
 NO. XL.

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LAMELLICORNES.

SERICOIDES.

HETERONYX (*continued*).

GROUP V.

Here commences the second of the two main divisions in which I have distributed the *Heteronyces*. With the exception of a very small number of species, its members agree in the outline of the head (viewed obliquely from behind), consisting of three convex curves, the middle one being the outline of the labrum, the summit of which usually overtops the level of the clypeus. In the aberrant species the outline of the labrum appears truncate or lightly concave, which is also the case with the aberrant species of the first main division. In the aberrant species of the first division, however, the summit of the labrum does not overtop the level of the clypeus, while in those of the second main division the reverse is the case. This, no doubt, appears to be a trivial character, but I find that its adoption distributes the species affected by it much more naturally than they would be if all these aberrant species were placed in either one of the main divisions. The aberrant species of the first main division are much more numerous than those of the second.

A character of considerable value for the distinguishing of species in this Group and the remainder is to be found in the degree of separation *inter se* of the three convexities that form the "trilobed outline" of the front of the head. In some species, the middle convexity (*i.e.*, the labrum) from a certain point of view is seen to be wholly free from the lateral convexities, so that it springs from (on either side) the *base* of a lateral convexity and the outline appears as trilobed in the strict sense of the term. When that is the case I call the trilobed outline "divided." In other species the outline does not present that appearance from any point of view, but the middle convexity appears as an arch springing on either side

from slightly below the *summit* of the arch of a lateral convexity, so that the outline is seen as a trisinate curve rather than as three separate and independent lobes. This character (the "division" of the trilobed outline) is not one that can be used with advantage to constitute primary or even secondary aggregates in a tabulation, owing to the numerous species in which the outline might be considered intermediate between the two forms; but in some instances where an already small aggregate requires subdivision, and there happen to be no species among them with the trilobed outline of intermediate form, it is of value for tabulation. I find this character to be remarkably constant and reliable within specific limits.

This Group contains fewer known species than any other, only five being attributable to it (of which two are now described as new). The two that I have placed at the beginning are closely allied *inter se*, the others all isolated forms resembling the rest and each other in little more than the structural characters that assign them to the Group. The following table differentiates the known species:—

- A. Middle lobe of trilobed outline of head not or scarcely more than half each lateral lobe.
- B. Pronotum more closely punctulate *capillatus*, *Macl.*
 BB. Pronotum less closely punctulate *placidus*, *Blackb.*
- AA. Middle lobe of trilobed outline much more than half each lateral lobe.
- B. Elytra not set with long erect hairs *zalotus*, *Blackb.*
 BB. Elytra set with long erect hairs
- C. Elytra opaque, granulate, scarcely visibly punctulate *Lindi*, *Blackb.*
- CC. Elytra nitid, coarsely rugulose punctulate *maculatus*, *Blackb.*
- H. *placidus*, sp. nov. *Modice elongatus*, postice leviter dilatatus; minus nitidus; castaneus; supra pilis brevibus adpressis et nonnullis erectis minus crebre vestitus; clypeo (hoc antice late leviter emarginato) fronteque crebre rugulosis, planum fere continuum formantibus; labro clypei planum vix attingenti; capite antice (a tergo oblique viso) tripliciter convexo, parte mediana quam laterales fere duplo angustiori; antennis 8-articulatis; prothorace quam longiori ut 19 ad 11 latiori, antice sat angustato, supra subfortiter minus crebre punctulato (puncturis circiter 17 in segmenti longitudine), lateribus (superne visis) sat arcuatis, angulis anticis sat acutis sat productis posticis (superne visis) sat rectis, basi bisinuata, margine basali ad latera perspicue magis elevato; elytris subgranulatis crebre subtiliter squamose punctulatis (trans elytron puncturis circiter 30); pygidio sat crebre nec profunde punctulato; coxis posticis quam metastar-

num sat brevioribus, quam segmentum ventrale 2^{um} sat longioribus; femoribus posticis sat dilatatis; tibiis anticis extus tridentatis; tarsorum posticorum articulo basali quam 2^{us} paullo breviori quam 3^{us} paullo longiori; unguiculis bifidis. Long., 5 l.; lat., 2½ l.

This species is very close to *H. capillatus*, Macl., and is difficult to distinguish from it by characters suitable for tabulation. The four specimens of it before me are notably lighter in colour (perhaps variable), with the frons more coarsely rugulose, the punctures of the pronotum larger and less close (in *capillatus* there are about 22 in the length of the segment), the pronotum less convex viewed from the side, the hind coxæ less closely punctulate, the hind femora considerably more dilated.

North-West Australia; Roebuck Bay.

H. zalotus, sp. nov. Elongatus, postice vix dilatatus; minus nitidus; testaceus; supra pilis perbrevibus adpressis et nonnullis erectis sparsim vestitus; clypeo crebre ruguloso, antice late nonnihil emarginato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales vix angustiori); fronte concinne minus crebre punctulata; hac clypeoque ut plana sat disparia visis; antennis 8-articulatis; prothorace quam longiori duplo latiori, antice sat angustato, supra subtilius nec crebre punctulato (puncturis circiter 15 in segmenti longitudine), lateribus (superne visis) postice rotundato-dilatatis, angulis anticis minus acutis modice productis posticis (superne visis) rotundatis, basi haud sinuata, margine basali subtili ad latera haud magis elevato; elytris crebre subtilius punctulatis (trans elytron puncturis circiter 27); pygidio crebrius subtilius nec profunde punctulato; coxis posticis quam metasternum paullo brevioribus, quam segmentum ventrale 2^{um} sat longioribus; tarsorum posticorum articulo basali quam 2^{us} sat breviori quam 3^{us} parum longiori; unguiculis bifidis. Maris segmento ventrali 5^o in medio transversim carinato. Long., 3½ l.; lat., 1½ l.

An extremely isolated species of unusually narrow and elongate form. The hind coxæ, though not very much shorter than the metasternum, leave a wide strip of the 1st ventral segment exposed.

Western Australia; Swan River (Mr. Lea).

H. submetallicus, Blackb. When I described this species I expressed some doubt as to its being really distinct from *H. Lindi*, Blackb. Since that time I have seen several more specimens of both forms, and find that the colour distinctions

are not constant, and that the difference in the hind angles of the prothorax is too slight to be rightly treated as specific. The prothorax (and indeed the whole body) of *submetallicus* is a trifle broader than that of *Lindi*, and to that perhaps is due the slightly blunter appearance of the hind angles when viewed from above. I am now satisfied that *submetallicus* is the female of *Lindi*.

GROUP VI.

The division of this Group into primary aggregates (A, AA, and AAA) is very satisfactory. All the species in A have hind coxæ either fully as long as the metasternum, or (if not quite so long) covering what I have called the 1st ventral segment (it is really the 3rd, the basal two being very short and entirely concealed under the coxæ), at least so nearly that only its linear hind edging is visible. In AA the hind coxæ are in every instance notably shorter than the metasternum. In all of them the portion of ventral segment exposed beyond their hind margin is considerably more than the mere linear hind edging. The species of AA have hind coxæ quite evidently (usually much) longer than the 2nd exposed ventral segment, but two of them are near the border line between AA and AAA, having the hind coxæ so slightly longer than the ventral segment in question that one has to give more than a passing glance before being satisfied that its place is in AA. Of these *H. tridens*, Blackb., differs notably from all those that I have placed in AAA by the very much coarser puncturation of its dorsal surface and the extremely narrow middle lobe of the trilobed outline of its head; and *H. nigellus*, Er., in AAA would stand beside *H. campestris*, from which it differs by the middle lobe of the trilobed outline notably narrower, the antennæ of dark colour, etc., etc.

The character that I have used chiefly for breaking up the primary into secondary aggregates is that of the puncturation of the dorsal surface. I am not altogether satisfied with this character for the purpose, inasmuch as there are species near the border line of all the aggregates formed by its use, but I have not been able to discover any more genuinely structural distinction by which more than much smaller aggregates of species could be formed, and in dealing with so large a number of species as those contained in this Group, it is inconvenient to make the secondary aggregates numerous. Fortunately, however, the *Heteronyces* do not appear to be variable within the limits of a species in respect of puncturation. I have carefully compared—in respect of a good many species—the puncturation of numerous individuals taken in company and under circumstances that allowed no doubt of specific

identity, and have found it always the case that their puncturation was practically identical. Females are apt to be punctured a little more coarsely than males, which causes the punctures to be a little closer to each other in the former sex; but if the punctures be counted there is scarcely any variation in number. I think, therefore, that this character is of practical value for forming secondary aggregates, although I find it quite necessary to preface the tabulation with a note on each aggregate of this nature calling attention to the species which are near the border line. In the aggregate A there are no species calling for remark in this respect, no member of C approximating in puncturation to CC. In the aggregate AA, under the heading CC, I have divided the species into three sub-aggregates, according as the punctures of the pronotum are (D) very numerous and close, 10 from the front not nearly reaching the middle; (DD) moderately so, 20 or more in the whole length, 10 from the front reaching the middle; and DDD decidedly sparse, 16 or less in the whole length, 10 from the front reaching well beyond the middle. In D no species can rightly be deemed near the border line. In DD the punctures of the pronotum are perhaps a little close in *H. maurulus*, 10 from the front scarcely reaching the middle of the segment, but in all the species under D the punctures of the pronotum are very evidently much closer still. In the aggregates founded on the elytral puncturation there are few, if any, species of doubtful position. It will, however, be well to note that the position of *ylgarnensis* in the aggregate having the elytral punctures close perhaps calls for the remark that the elytral punctures of that species are a little less close than in its companions, 12 from the suture reaching not far from the middle of the elytron.

It is, perhaps, hardly necessary to remind the student that some of the characters indicated in the descriptions must not be relied upon as exactly correct for specimens other than those on which the descriptions were founded without its being borne in mind that not all the types can be depended upon to be ordinary types of fresh examples. Specimens taken, often by non-scientific collectors, in remote parts of Australia frequently occupy a long time in travel before reaching the describer, and when they reach him may have suffered more or less from abrasion and other casualties, so that by that time some characters—especially the degree of hindward dilatation of the elytra, the density of the vestiture, and the colour—may not be quite as they are in a perfectly fresh specimen.

I have made but little reference to sexual characters in the descriptions of species of this and the following Groups. The fact is that I have in almost all cases failed to discover any well-marked sexual characters at all, and even the character of the less convexity of the ventral segments in the male (which is, I think, fairly constant) is in many cases not very apparent in specimens that are not fresh and well preserved.

For the sake of clearness I may, perhaps, say that in descriptions of the basal edging of the pronotum the phrase "ad latera magis elevatus" means that the edging becomes more elevated at the ends of the basal margin than it is in other parts of its length.

The number of names (including those mentioned below as doubtful, and therefore excluded from the tabulation) of *Heteronyces* attributable to this Group hitherto published is, I believe, 37. Of these I have been able to place 32 in my tabulation. I now add 14 new species, bringing the number of identifiable species to 47 (one of which, however (*H. nigricans*, Burm.), is excluded from the tabulation for the reason mentioned below).

The following table indicates distinctive characters of the species known to me of this Group, below which will be found notes on some of the previously-described species, and then descriptions of new species:—

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|--|--------------------------------|
| A. Hind coxæ as long as metasternum, or if scarcely so long at least all but covering 1st ventral segment. | |
| B. Joint 3 of antennæ not or scarcely shorter than joint 2. | |
| C. Elytral punctures not very fine and close (about 12 from suture reach to or beyond middle). | |
| D. Labrum (viewed from in front) strongly concave longitudinally, and not transverse | fervidus, <i>Blackb.</i> |
| DD. Labrum (viewed from in front) an almost equilateral triangle | nasutus, <i>Blackb.</i> |
| DDD. Labrum (viewed from in front) very strongly transverse. | |
| E. Labrum (viewed from in front) deeply sulcate longitudinally | apertus, <i>Blackb.</i> |
| EE. Labrum not as E. | |
| F. Hind angles of prothorax (viewed from above) strongly defined | comes, <i>Blackb.</i> |
| FF. Hind angles of prothorax (viewed from above) quite rounded off. | |
| G. Middle lobe divided from lateral lobes | transversicollis, <i>Macl.</i> |
| GG. Middle lobe not divided from lateral lobes | vicinus, <i>Blackb.</i> |

- CC. Elytral punctures fine and close (12 from suture not nearly reaching middle) intrusus, *Blackb.*
- BB. Joint 3 of antennæ much shorter than joint 2.
- C. Middle lobe scarcely more than half a lateral lobe granulifer, *Blackb.*
- CC. Middle lobe much more than half a lateral lobe.
- D. Hind angles of prothorax (viewed from above) well defined, rectangular normalis, *Blackb.*
- DD. Hind angles of prothorax (viewed from above) quite rounded off.
- E. Elytra non-striate outside sub-sutural stria brevicornis, *Blackb.*
- EE. Each elytron with 5 or 6 quite distinct striæ pygmæus, *Blackb.*
- AA. Hind coxæ notably shorter than metasternum or (if less notably shorter) leaving 1st ventral segment widely exposed.
- B. Middle of ventral segments opaque, with close fine asperity anceps, *Blackb.*
- BB. Ventral segments not as B.
- (1) C. Front face of labrum quite strongly and closely rugulose, or even granulate.
- D. Elytral punctures not extremely close (20 from suture reach at least to middle).
- E. Prothorax fully twice as wide as long piger, *Blackb.*
- EE. Prothorax distinctly less than twice as wide as long.
- F. Elytral punctures close (15 from suture not passing middle).
- G. Elytra transversely thickened close to apex; therefore abruptly declivous at apex [Blackb. consanguineus, raucinasus, *Blackb.*
- GG. Elytra normal
- FF. Elytral punctures not close (15 from suture considerably pass middle) glabratus, *Er.*
- DD. Elytral punctures extremely close (20 from suture not nearly reaching middle) mulwalensis, *Blackb.*
- CC. Front face of labrum not rugulose, usually finely punctulate and more or less nitid.
- D. Punctures of pronotum close (10 from front not very nearly reaching middle).

(1) *H. glabratus*, *Er.*, is somewhat intermediate in respect of this character.

- E. Elytral punctures close (12 from suture do not reach middle).
- F. Elytral punctures extremely close (20 from suture not reaching middle).
- G. Joints 2 and 3 of antennæ of about equal length.
- H. Joint 4 of antennæ strongly triangular, transverse *marcidus, Blackb.*
- HH. Joint 4 of antennæ scarcely triangular, not transverse *proprius, Blackb.*
- GG. Joint 3 of antennæ very much shorter than 2 *punctipennis, Blackb.*
- FF. Elytral punctures less close (20 from suture pass middle strongly).
- G. Joint 4 of antennæ strongly transverse *constans, Blackb.*
- GG. Joint 4 of antennæ not or scarcely transverse.
- H. Clypeus and frons on an almost even plane *yilgarnensis, Blackb.*
- HH. Planes of clypeus and frons very different *validus, Blackb.*
- EE. Elytral punctures not close (12 from suture reach middle) *crinitus, Blackb.*
- (2) DD. Punctures of pronotum not close (about 10 from front reach or pass middle).
- E. Trilobed outline sharply divided, its middle lobe less than half a lateral lobe.
- F. Club of antennæ testaceous.
- G. Elytra strongly rugulose, in strong contrast to pronotum *Sloanci, Blackb.*
- GG. Elytra not as G.
- H. Hind coxæ considerably longer than 2nd ventral segment.
- I. Marginal edging of clypeus interrupted in middle.
- J. Joint 2 of antennæ short globular, not longer than 3 *pinguis, Blackb.*
- JJ. Joint 2 of antennæ not globular, distinctly longer than 3 *agricola, Blackb.*
- II. Marginal edging of clypeus continuous *auricomus, Blackb.*
- HH. Hind coxæ very little longer than 2nd ventral segment *tridens, Blackb.*

(2) In *H. maurulus* a trifle closer.

- FF. Club of antennæ dark ... nigellus, *Er.* (?)
- EE. Middle lobe of trilobed outline more than half a lateral lobe.
- F. Elytral punctures close (12 from suture not nearly reaching middle).
- G. Sides of clypeus project laterally well beyond the eyes.
- H. Pronotum viewed obliquely from side has no trace of a basal angle.
- I. Punctures of elytra small, scarcely larger than in *H. jubatus* ... Cunnamullæ, *Blackb.*
- II. Punctures of elytra notably larger ... decorus, *Blackb.*
- HH. Hind angles of prothorax (viewed obliquely from side) at least quite perceptible
- I. Labrum (viewed from in front) has a well-defined erect front face distinct from the lower plane ... granulatus, *Blackb.*
- II. Labrum scarcely having an erect front face distinct from lower plane ... maurulus, *Blackb.*
- GG. Sides of clypeus do not project laterally beyond the eyes ... cygneus, *Blackb.*
- FF. Elytral punctures not close (12 from suture reach or pass the middle).
- G. Punctures of pronotum not sparse (about 20 in length of segment) ... dubius, *Blackb.*
- GG. Punctures of pronotum very sparse (15 or less in length of segment).
- H. Basal edging of pronotum not or scarcely more raised at ends; hind angles quite rounded off.
- I. Apical half at least of elytra conspicuously granulate.
- J. Punctures of elytra very large and coarse ... crassus, *Blackb.*
- JJ. Punctures of elytra notably smaller and less coarse ... Augustæ, *Blackb.*
- II. Elytra not or scarcely granulate ... electus, *Blackb.*

- HH. Basal edging of pronotum notably raised at ends; hind angles well marked fraserensis, *Blackb.*
- AAA. Hind coxæ not longer than 2nd visible ventral segment.
- B. Frons not perpendicularly declivous in front.
- C. Pronotum closely punctulate (20 or more punctures in length of segment).
- D. Clypeus and frons on an even continuous plane austrinus, *Blackb.*
- DD. Planes of clypeus and frons very different, latter very convex lateritius, *Blackb.*
- CC. Pronotum sparsely punctulate; 15 or 16 punctures down middle line.
- D. Frons quite strongly (somewhat coarsely) rugulose campestris, *Blackb.*
- DD. Frons smoothly, finely, and not closely punctulate.
- E. Basal edging of pronotum well defined debilis, *Blackb.*
- EE. Basal edging of pronotum extremely fine (scarcely distinct) jejunos, *Blackb.*
- BB. Frons perpendicularly declivous at the clypeal suture dentipes, *Blackb.*

H. raucinasus, *Blackb.* I believe that there are before me two distinct species extremely close to *raucinasus* and to each other, but as I have more than a single specimen of only one of the three, it seems better to regard them for the present as possibly varieties. The type is from South Australia, and has non-granulate elytra, with puncturation finer and notably less squamose than the other two. Of the others, one is from South Australia, and is fairly plentiful; besides the different elytral sculpture already noted its prothorax is quite evidently more transverse and less narrowed in front. The third is from the Dividing Range in Victoria, and is a little smaller than the last mentioned, with its prothorax even more narrowed in front than that of *raucinasus*.

H. constans, *Blackb.* This South Australian species is very close to *H. yilgaruensis*, from Western Australia. The puncturation of the dorsal surface is quite distinctly closer, especially about the apical region of the elytra; but the best distinction that I have observed is that noted in the tabulation.

H. nigellus, *Er. (?)*. I have already pointed out and discussed the difficulty of identifying this species (*Proc. Linn. Soc., N.S.W., 1889, p. 157*). I am not able to throw any

fresh light upon the subject. The elytra vary in colour from black to rufous in the species which I take to be *nigellus*.

H. Augustæ, Blackb. This species forms with *crassus*, Blackb., and *electus*, Blackb., a trio of species not very easy to distinguish by characters that lend themselves to tabulation. The coarse, sparse puncturation of the elytra of *crassus* (only about 18 punctures across an elytron) is, however, very distinctive. Of the other two, *electus* is evidently the narrower and less robust, is invariably (so far as I have seen) very much lighter in colour, with prothorax less narrowed in front and less rounded on the sides, and with elytra non-granulate or with at most an accidental two or three granules, the granules of *Augustæ* being plentiful and distributed over the whole surface of the elytra.

H. nigricans, Burm. There is a specimen in the Macleay Museum at Sydney bearing this name. I examined it when I was writing my former Revision of *Heteronyx*, and thought it correctly identified. When I visited the Macleay Museum with a view to the preparation of this present memoir, I accidentally omitted to re-examine the said specimen, and as my description of it in my former Revision does not mention all the details needed to be known before the species can be placed in the tabulation of this present memoir, I am obliged to pass it by for the present, and must content myself with referring to Proc. Linn. Soc., N.S.W., 1889, pp. 142 and 151, for information concerning it. It should be noted that in my former Revision (*loc. cit.*) I accidentally called this species *nigricans*, "Er.," in error.

H. obscurus, Le Guill. I have not seen the original description under this name. Burmeister states that the species is identical with *H. nigellus*, Er. The name and habitat taken together are suggestive of the statement being probably correct. The name, however, cannot stand, *H. obscurus*, Hombr. et Jacq. (Blanch.), having precedence of date.

H. spadiceus, Burm. It is probable that this is a member of Group VI. It is from the Swan River, and is described as entirely glabrous (*überall haarfrei*). I conjecture that the description was founded on a badly-abraded insect. The structure of the claws is not mentioned.

H. unicolor, Blanch. This species also probably appertains to Group VI. The want of information concerning the claws renders it possible (as in the case of the preceding species) that it is a member of Group V. It could be identified only by comparison with the type, or by means of a specimen from Tasmania agreeing with the description.

H. apertus, sp. nov. Modice elongatus, postice leviter dilatatus; modice nitidus; ferrugineus; supra pilis minus elongatis erectis minus crebre vestitus; clypeo crebre ruguloso, antice late subtruncato; labro longitudinaliter profunde late sulcato, clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales paullo angustiori); fronte sat grosse vix crebre punctulata; hac clypeoque ut plana manifeste disparia visis; antennis 8-articulatis, articulo 3^o quam 2^{us} sublongiori; prothorace quam longiori ut 9 ad 5 latiori, antice leviter angustato, supra sat fortiter nec crebre punctulato (puncturis circiter 13 in segmenti longitudine), lateribus (superne visis) modice arcuatis, angulis anticis sat acutis sat productis posticis (superne visis) obtusis bene definitis, basi leviter bisinuata, margine basali latera versus magis elevato; elytris granulatis, squamose sat sparsim nec subtiliter nec profunde punctulatis (trans elytron puncturis circiter 20); pygidio crebrius minus fortiter punctulato; coxis posticis quam metasternum vix brevioribus; tarsorum posticorum articulo basali quam 2^{us} fere triplo, quam 3^{us} sat multo, breviori; unguiculis appendiculatis. Long., $4\frac{2}{3}$ l.; lat., $2\frac{2}{3}$ l.

The peculiar form of the labrum, as well as the great elongation of the second joint of the hind tarsi, renders this species easy of identification.

Western Australia; Perth, etc.

H. comes, sp. nov. Minus elongatus, postice sat dilatatus; sat nitidus; niger, antennis (harum flabello testaceo) pedibusque nonnihil rufescentibus; supra pilis brevibus pallidis adpressis sparsim vestitus; clypeo (hoc antice subtruncato) fronteque planum sat continuum præbentibus, fortiter sat æqualiter rugulosis; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat multo angustiori); antennis 8-articulatis, articulo 3^o quam 2^{us} vix breviori; prothorace quam longiori ut 8 ad 5 latiori, antice minus angustato, supra sat fortiter vix crebre punctulato (puncturis circiter 19 in segmenti longitudine), lateribus (superne visis) leviter arcuatis, angulis anticis subacutis modice productis posticis (superne visis) rectis, basi leviter bisinuata, margine basali sat æquali; elytris subrugulose subgrosse sparsius punctulatis (trans elytron puncturis circiter 17); pygidio fere ut pronotum punctulato; coxis posticis quam metasternum nonnihil brevioribus sed segmentum primum visibilem fere totum tegentibus; tarsorum posticorum

articulo basali quam 2^{us} multo, quam 3^{us} paullo, breviori; unguiculis appendiculatis. Long., 4 l.; lat., 2 l.

In some respects not unlike the species that I have regarded as being *H. nigricans*, Burm., but readily distinguishable from it by, *inter alia*, its longer hind coxæ and the much larger and less close punctures of its elytra. Each elytron has faint indications of two longitudinal costæ.

Western Australia; Albany.

H. vicinus, sp. nov. Minus elongatus, postice sat dilatatus; sat nitidus; fuscus, antennarum flabello testaceo; supra pilis pallidis minus brevibus erectis minus crebre vestitus; clypeo antice subtruncato, fortiter minus crebre ruguloso; labro clypei planum superanti: capite antice (a tergo oblique viso) tripliciter convexo (parte mediana prominenti quam laterales sat angustiori); fronte convexa sat grosse sat crebre punctulata: hac clypeoque ut plana disparia visis; antennis 8-articulatis, articulo 3^o quam 2^{us} vix breviori; prothorace quam longiori duplo latiori, antice vix angustato, supra sat grosse minus sparsim punctulato (puncturis circiter 11 in segmenti longitudine), lateribus (superne visis) sat arcuatis, angulis anticis obtusis vix productis posticis (superne visis) rotundatis, basi haud sinuata, margine basali sat æquali; elytris minute granulatis, subrugulose sat grosse nec crebre punctulatis (trans elytron puncturis circiter 16); pygidio sparsius nec subtiliter punctulato; coxis posticis metasterno longitudine sat æqualibus; tarsorum posteriorum articulo basali quam 2^{us} paullo breviori, quam 3^{us} sublongiori; unguiculis appendiculatis, parte basali ad apicem spiniformi. Long., $2\frac{4}{5}$ l.; lat., $1\frac{2}{3}$ l.

This very small species has much the appearance to a casual glance of a dwarf *H. transversicollis*, Macl., but differs from it also by, *inter alia*, the very much wider and more prominent middle lobe (labrum) of the trilobed outline of its head (in *transversicollis* not more than half a lateral lobe) and the closer puncturation of its elytra.

South Australia; near Adelaide (Mr. Griffith).

H. intrusus, sp. nov. Minus elongatus, postice sat dilatatus; minus nitidus; ferrugineus: supra pilis brevibus adpressis sat crebre vestitus; clypeo fortiter ruguloso, antice subtruncato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat angustiori); fronte fortiter rugulose sat crebre punctulata; hac clypeoque ut plana paullo disparia visis; antennis 8-articulatis,

articulo 3^o quam 2^{us} vix breviori; prothorace quam longiori ut 7 ad 4 latiori, antice parum angustato, supra minus fortiter subcrebre punctulato (puncturis circiter 16 in segmenti longitudine), lateribus (superne visis) sat arcuatis, angulis anticis sat acutis minus productis posticis (superne visis) rectis, basi sat fortiter bisinuata, margine basali ad latera magis elevato; elytris crebre subtilius punctulatis (trans elytron puncturis circiter 30); pygidio sat fortiter sparsius punctulato, longitudinaliter in parte antica leviter carinato; coxis posticis quam metasternum vix brevioribus; tarsorum posticorum articulo basali quam 2^{us} duplo, quam 3^{us} sat multo, breviori; unguiculis appendiculatis. Long., 3 $\frac{3}{5}$ l.; lat., 1 $\frac{4}{5}$ l.

Very easily distinguishable from all the species to which it is structurally a close ally by the much finer and close puncturation of its elytra. The trilobed outline of the head is divided, but not strongly; the middle lobe has about two-thirds the span of a lateral lobe.

Western Australia; Perth (Mr. Lea).

H. pygmaeus, sp. nov. Minus elongatus, postice parum dilatatus; minus nitidus; rufescens, elytris pallidioribus; supra pilis sat brevibus adpressis sat crebre vestitus; clypeo sat crebre sat grosse ruguloso, antice subtruncato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales parum angustiori); fronte subrugulose sat fortiter sat crebre punctulata; hac clypeoque ut plana paullo disparia visis; antennis 8-articulatis brevissimis, articulo 3^o quam 2^{us} multo breviori; prothorace quam longiori ut 12 ad 7 latiori, antice minus angustato, supra subtiliter sat crebre punctulato (puncturis circiter 19 in segmenti longitudine), lateribus (superne visis) fortiter rotundatis pone medium manifeste dilatatis, angulis anticis obtusis vix productis posticis (superne visis) obtuse rotundatis, basi haud sinuata, margine basali subtili æquali; elytris manifeste substriatis, crebre subtiliter punctulatis (trans elytron puncturis circiter 30); pygidio subtilius minus crebre punctulato; coxis posticis quam metasternum haud brevioribus; tarsorum posticorum articulo basali quam 2^{us} vix breviori, quam 3^{us} paullo longiori; unguiculis appendiculatis. Long., 2 $\frac{1}{2}$ l.; lat., 1 $\frac{1}{4}$ l.

This very small species is closely allied to *H. brevicornis*, Blackb., from which, however, it is easily distinguishable by, *inter alia*, its elytra very evidently substriate. The trilobed

outline of the head is divided, but not very conspicuously, the middle lobe prominent and nearly as wide as a lateral lobe.

Western Australia; Yilgarn (Mr. French).

H. proprius, sp. nov. Modice elongatus, postice parum dilatatus; minus nitidus; ferrugineus; supra pilis brevibus adpressis sat crebre vestitus; clypeo sat crebre ruguloso, antice leviter emarginato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat angustiori); fronte fortiter sat crebre vix rugulose punctulata; hac clypeoque ut plana sat disparia visis; antennis 8-articulatis, articulo 3^o quam 2^{us} et quam 4^{us} paullo breviori; prothorace quam longiori ut 9 ad 5 latiori, antice sat angustato, supra crebre subtilius punctulato (puncturis circiter 25 in segmenti longitudine), lateribus (superne visis) modice arcuatis, angulis anticis minus acutis minus productis posticis (superne visis) rotundato-obtusis, basi leviter bisinuata, margine basali latera versus magis elevato; elytris crebre subtilius punctulatis (trans elytron puncturis circiter 32), minute plus minusve crebre granulatis; pygidiō sat crebre minus subtiliter punctulato; coxis posticis quam metasternum sat brevioribus quam segmentum ventrale 2^{um} sat longioribus; tarsorum posteriorum articulo basali quam 2^{us} sat multo quam 3^{us} paullo vel vix breviori; unguiculis appendiculatis. Long., $4\frac{2}{3}$ l.; lat., 2³ l. (vix.).

Among the species of this Group with hind coxæ of intermediate length, the front face of the labrum nitid and finely punctulate, and the pronotum and elytra closely punctulate, this species is easily distinguishable by the antennal characters indicated in the tabulation. The fourth joint of the antennæ longer than the third is an unusual character. The trilobed outline of the head is feebly developed and not divided, the middle lobe about two-thirds of a lateral lobe.

Western Australia; Perth, etc. (Mr. Lea).

H. validus, sp. nov. Minus elongatus, postice sat dilatatus; sat nitidus; obscure ferrugineus, antennis dilutioribus; supra pilis brevibus adpressis minus crebre vestitus; clypeo crebre minus fortiter ruguloso, antice late emarginato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales multo angustiori); fronte crebre rugulose sat fortiter punctulata; hac clypeoque ut plana valde disparia visis; antennis 8-articulatis, articulo 3^o quam 2^{us} vix breviori; prothorace quam longiori ut 9 ad 5 latiori, antice sat angustato, supra crebre minus fortiter

punctulato (puncturis circiter 24 in segmenti longitudine), lateribus (superne visis) sat arcuatis, angulis anticis sat acutis minus productis posticis (superne visis) obtusis, basi nonnihil bisinuata, margine basali latera versus magis elevato; elytris sat crebre minus fortiter punctulatis (trans elytron puncturis circiter 30); pygidio longitudinaliter subcarinato, sat crebre subtilius leviter punctulato; coxis posticis quam metasternum sat brevioribus quam segmentum ventrale 2^{um} sat longioribus; tarsorum posticorum articulo basali quam 2^{us} sat multo breviori quam 3^{us} sublengiori; unguiculis appendiculatis. Long., $4\frac{2}{5}$ l.; lat., $2\frac{1}{5}$ l.

Rather near to *H. yilgarnensis*, Blackb., but, *inter alia*, notably smaller, with the head very different, elytral sculpture smoother, basal joint of hind tarsi shorter in proportion to second joint. The trilobed outline of the head is well defined, divided; the middle lobe not more projecting than the lateral lobes, and scarcely larger than half a lateral lobe.

Victoria (Mr. Griffith).

H. crinitus, sp. nov. Modice elongatus, postice parum dilatatus: modice nitidus; niger, antennis pedibusque piceis; supra capillis elongatis fulvis erectis sat crebre vestitus; clypeo (hoc antice leviter emarginato) fronteque confertim subtilius rugulosis, ut plana sat disparia visis; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat multo angustiori); antennis 8-articulatis, articulo 3^o quam 2^{us} sat multo breviori; prothorace quam longiori ut 5 ad 3 latiori, antice minus angustato, supra crebre minus fortiter punctulato (puncturis circiter 24 in segmenti longitudine), lateribus (superne visis) modice arcuatis, angulis anticis minus acutis minus productis posticis (superne visis) obtuse rectis, basi leviter bisinuata, margine basali sat æquali; elytris obsolete substriatis, sat fortiter minus crebre nonnihil rugulose punctulatis (trans elytron puncturis circiter 20); pygidio crebre minus fortiter punctulato; coxis posticis quam metasternum sat brevioribus, quam segmentum ventrale 2^{um} sat longioribus; tarsorum posticorum articulo basali quam 2^{us} sat multo breviori, 3^o sat æquali; unguiculis appendiculatis. Long., $4\frac{1}{2}$ l.; lat., $2\frac{1}{5}$ l.

Easily distinguishable from all near allies by colour and vestiture. The puncturation of the pronotum much finer and closer than of the elytra also furnishes a conspicuous character.

Tasmania; Mount Wellington (Mr. Griffith).

H. agricola, sp. nov. Minus elongatus, postice leviter dilatatus; sat nitidus; obscure ferrugineus; supra pilis brevibus adpressis minus crebre vestitus; clypeo (hoc antice emarginato) fronteque crebre minus fortiter rugulosis, ut plana manifeste disparia visis; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam lateralium dimidium angustiori); antennis 8-articulatis, articulo 3^o quam 2^{us} parum breviori; prothorace quam longiori ut 11 ad 6 latiori, antice sat angustata, supra minus crebre minus fortiter punctulato (puncturis circiter 20 in segmenti longitudine), lateribus (superne visis) leviter arcuatis, angulis anticis sat acutis sat productis posticis (superne visis) subrectis, basi bisinuata, margine basali ad latera paullo magis elevato; elytris minus crebre vix fortiter plus minusve squamose punctulatis (trans elytron puncturis circiter 25); pygidio crebrius subtiliter punctulato, longitudinaliter nonnihil subcarinato; coxis posticis quam metasternum sat brevioribus quam segmentum ventrale 2^{um} sat longioribus: tarsorum posticorum articulo basali quam 2^{us} sat breviori, 3^o sat æquali; unguiculis appendiculatis. Long., $5\frac{1}{5}$ -6 l.; lat., $2\frac{2}{5}$ -3 l.

The form of the trilobed outline of the head renders this species very easy to distinguish from almost all to which it bears any notable general resemblance. It is nearest to *H. pinguis*, Blackb., which has a similar trilobed outline of the head and a similar clypeus; but *pinguis* differs from it by numerous characters, especially the antennal structure (which seems to furnish the most convenient character for tabulation), the head notably smaller in proportion to the prothorax, colour much darker, form notably more depressed with more hindward dilatation, elytral puncturation not at all of the squamose type, clypeus and frons notably less near to forming an even plane. Compared with *H. agricola*, Blackb., *H. auricomus*, Blackb., is much smaller, its colour much lighter, its clypeus with a continuous raised edging across the front, etc. The trilobed outline of the head in *agricola* is fairly strongly defined, though notably less so than in *H. Sloanei*, Blackb., and is divided, with the middle lobe slightly less than half a lateral lobe. *Sloanei* is easily distinguished from *agricola* by its strongly rugulose elytra, etc.

New South Wales; Emu Plains (Mr. Sloane).

H. Cunnamullæ, sp. nov. Modice elongatus, postice nonnihil dilatatus; sat nitidus; ferrugineus; supra pilis brevibus adpressis minus crebre vestitus; clypeo crebre minus

fortiter ruguloso, antice leviter emarginato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam lateralium dimidium paullo latiori); fronte crebre fortius ruguloso-punctulata; hac clypeoque ut plana sat disparia visis; antennis 8-articulatis, articulo 3^o quam 2^{us} sat breviori; prothorace quam longiori ut 20 ad 11 latiori, antice sat fortiter angustato, fortius minus crebre punctulato (puncturis circiter 18 in segmenti longitudine), lateribus (superne visis) sat arcuatis pone medium nonnihil dilatato-rotundatis, angulis anticis sat acutis minus productis posticis (superne visis) rotundato-obtusis, basi leviter bisinuata, margine basali sat æquali; elytris crebre minus fortiter sat squamose punctulatis (trans elytron puncturis circiter 30), pygidio minus fortiter sat crebre punctulato; coxis posticis quam metasternum sat brevioribus quam segmentum ventrale 2^{um} sat longioribus; tarsorum posteriorum articulo basali quam 2^{us} sat breviori, 3^o sat æquali; unguiculis appendiculatis. Long., 5 l.; lat., $2\frac{3}{10}$ l.

Although the hind angles of the prothorax when viewed from directly above the segment appear (owing to the convexity of the segment concealing the true margin) to be not quite rounded off, yet when looked at a little from the side obliquely (so that the true margin is seen) they cease to be traceable, and are an even curve with no definite place of meeting of the base and lateral margin. That is not the case with any other of the near allies of this species except *decorus*, Blackb., which, however, is a larger, broader, and more robust insect, with the punctures of the elytra notably larger. The trilobed outline of the head of this species is well developed and divided (but not very strongly), the middle lobe about two-thirds of a lateral lobe.

Queensland; Cunnamulla (Mr. Lea).

H. granulatus, sp. nov. Minus elongatus, postice modice dilatatus; sat nitidus; obscure ferrugineus; supra pilis brevibus adpressis sat sparsim vestitus; clypeo (hoc antice subtruncato) fronteque crebre sat fortiter rugulosis; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat angustiori); antennis 8-articulatis, articulo 3^o quam 2^{us} paullo breviori; prothorace quam longiori ut 14 ad 8 latiori, antice modice angustato, supra fortius minus crebre punctulato (puncturis circiter 20 in segmenti longitudine), lateribus (superne visis) leviter arcuatis, angulis anticis sat acutis modice productis posticis (superne visis)

sat acute rectis, basi sat fortiter bisinuata, margine basali ad latera summa paullo magis elevato; elytris crebre minus fortiter squamose punctulatis (trans elytron puncturis circiter 30), granulis minutis nitidis permultis instructis; pygidio longitudinaliter subcarinato crebre subtilius punctulato; coxis posticis quam metasternum sat brevioribus quam segmentum ventrale 2^{um} sat longioribus; tarsorum posticorum articulo basali quam 2^{us} paullo breviori, 3^o subæquali; unguiculis appendiculatis. Long., $4\frac{2}{3}$ l.; lat., $2\frac{3}{10}$ l.

Resembles *Cunnamullæ*, Blackb., in general appearance, but can be readily distinguished from it by the difference in the form of the prothorax (already discussed under *Cunnamullæ*). The trilobed outline of the head is feebly developed, scarcely divided: the middle lobe about two-thirds of a lateral lobe. The puncturation of the elytra becomes very fine and close near the apex.

New South Wales: Sydney, Galston, Blue Mountains.

H. maurulus, sp. nov. Modice elongatus, postice vix dilatatus; minus nitidus; niger, elytris piceis, palpis antennis tarsisque rufescentibus; supra pilis brevibus adpressis vestitus; clypeo crebre ruguloso, antice emarginato; labro clypei planum superanti, toto longitudinaliter concavo; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales paullo angustiori); fronte crebre fortiter ruguloso-punctulata; hac clypeoque ut plana minus disparia visis; antennis 8-articulatis, articulo 3^o quam 2^{us} parum breviori; prothorace quam longiori ut 9 ad 5 latiori, antice sat angustato, minus fortiter vix crebre punctulato (puncturis circiter 21 in segmenti longitudine), lateribus (superne visis) modice arcuatis, angulis anticis minus acutis minus productis posticis (superne visis) rectis nonnihil retrorsum productis, basi bisinuata, margine basali sat æquali; elytris nonnihil substriatis, crebre subtilius aspere punctulatis (trans elytron puncturis circiter 30); pygidio sparsius subtilius punctulato; coxis posticis quam metasternum sat brevioribus quam segmentum ventrale 2^{um} sat longioribus; tarsorum posticorum articulo basali quam 2^{us} sat breviori quam 3^{us} sat longiori; unguiculis appendiculatis. Long., 4 l.; lat., 2 l.

A very distinctive character of this species is found in the shape of the labrum, which does not appear to have an erect plane (distinct from a lower plane sloping away more or less horizontally hindward from the lower edge of the erect plane). In most *Heteronyces*, of Groups V.-VIII. (e.g., *H. elongatus*, Blanch., of this memoir), the erect plane of the

labrum is conspicuously present. *H. jubatus*, Blackb., is a species having no trace of the erect plane. In the present species the labrum is of the *jubatus* type, but not quite absolutely, as from a certain point of view there is the appearance of an extremely narrow upturned edging, which, on close inspection, is seen to be not really erect. The trilobed outline of the head is feebly developed and scarcely divided, the middle lobe a little more than two-thirds of a lateral lobe. The punctures of the pronotum are a trifle closer than in the immediately allied species (10 from the front scarcely reaching the middle of the segment), but the species could not be placed in the aggregate with pronotum closely punctured, in all of which 10 punctures from the front fall decidedly short of reaching the middle.

Victoria.

H. austrinus, sp. nov. Modice elongatus, postice sat dilatatus; sat nitidus; ferrugineus; supra pilis brevibus adpressis minus crebre vestitus: clypeo (hoc antice late vix emarginato) frontequae crebre rugulosis, fere ut planum continuum visis; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam lateralium dimidium paullo latiori); antennis 8-articulatis, articulo 3^o quam 2^{us} sublongiori; prothorace quam longiori ut 8 ad 5 latiori, antice parum angustato; supra crebre sat subtiliter punctulato (puncturis circiter 27 in segmenti longitudine), lateribus (superne visis) sat arcuatis pone medium nonnihil ampliato-rotundatis, angulis anticis sat acutis modice productis posticis (superne visis) obtusis, basi leviter bisinuata, margine basali ad latera summa nonnihil magis elevato; elytris crebre minus fortiter punctulatis (trans elytron puncturis circiter 30); coxis posticis quam metasternum multo brevioribus, quam segmentum ventrale 2^{um} vix longioribus; tarsorum posticorum articulo basali quam 2^{us} sat multo, quam 3^{us} paullo, breviori; unguiculis appendiculatis. Long., 4 $\frac{2}{5}$ l.; lat., 2 $\frac{1}{5}$ l.

The unusually short hind coxæ furnish a distinctive character for this species among most of the *Heteronyces* of this Group. From *H. lateritius*, Blackb. (which stands beside it in my tabulation), it may be readily distinguished by its prothorax being scarcely narrower in front than at the base as well as by the character cited in the tabulation. The trilobed outline of its head is fairly well developed but not distinctly divided, the middle lobe well projected, and a little less in size than two-thirds of a lateral lobe.

Western Australia; Swan River.

H. campestris, sp. nov. Modice elongatus, postice sat dilatatus; sat nitidus; ferrugineus; supra pilis sat brevibus adpressis minus sparsim vestitus; clypeo crebre ruguloso, antice late leviter emarginato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat angustiori); fronte crebre rugulose punctulata; hac clypeoque ut plana sat disparia visis; antennis 8-articulatis, articulo 3^o quam 2^{us} sublongiori; prothorace quam longiori ut 24 ad 13 latiori, antice minus angustato, supra minus crebre sat fortiter punctulato (puncturis circiter 16 in segmenti longitudine), lateribus (superne visis) leviter arcuatis, angulis anticis sat acutis minus productis posticis (superne visis) subrectis, basi leviter bisinuata, margine basali ad latera vix magis elevato; elytris subfortiter sat crebre granulatim punctulatis (trans elytron puncturis circiter 28); pygidio crebre subtilius punctulato; coxis posticis quam metasternum multo brevioribus quam segmentum ventrale 2^{um} vix longioribus; tarsorum posticorum articulo basali quam 2^{us} paullo breviori quam 3^{us} paullo longiori; unguiculis appendiculatis. Long., 4 l.; lat., 2 l.

This species bears a general resemblance to *H. granulatus*, Blackb. It is, however, easily distinguishable from that species by its notably shorter hind coxæ, its pronotum notably less narrowed in front, punctures of dorsal surface evidently larger and less close. The trilobed outline of its head is well defined and divided, the middle lobe about two-thirds of a lateral lobe. The labrum presents the very unusual character of the upper (arched) outline of the erect front face, as viewed from in front, being finely margined.

New South Wales; Sydney.

GROUP VII.

Since this Group and the next both contain numerous species which are assigned to either Group, according as their hind claws are bifid or appendiculate, and as there are undoubtedly degrees of bifidity and appendiculation, some species being either strongly or feebly bifid or appendiculate, it is, of course, obvious that in dealing with these Groups very particular attention must be paid to the claws. I do not think that there are any species in either Group whose claw-structure would be likely on careful examination to be mistaken for that of the other Group. Nevertheless, it is possible that an observer whose eye was not trained by lengthy study of these insects might feel some hesitation in confidently

assigning to their Group a few of those whose claw-structure is nearest to the border line. It is, perhaps, well, therefore, to repeat here the definitions of bifid and appendiculate claws with special application to the requirements of identification in these particular Groups. A typically bifid claw, then, is one in which the basal piece is conspicuously produced at its inner apex into a process more or less perpendicular to the axis of the claw, which process is at least half as large as the process of the apical piece, the whole basal piece being on the external margin much longer than (usually about twice as long as) the apical piece. A typically appendiculate claw is not produced at the inner apex of the basal piece, or is produced into a minute process much less than half as large as the process of the apical piece and very much more slender, the whole basal piece being on the external margin not much longer than the apical piece. Near the border line (in respect of the claws) of Group VIII. are a few species in which the apical piece of the (hind) claws is larger than normal, or the process of the basal piece is scarcely half as large as that of the apical piece. In these possibly doubtful species one at least of the following characters is present in the claws, and is not present in those of any possibly doubtful species of Group VIII.:—(a) The process of the basal piece a wide triangular tooth-like projection, or truncate at its apex (as distinguished from the apex of the whole basal piece); (b) the intermediate or front claws (or both of them) notably more typically bifid than the hind claws. The species with hind claws least pronouncedly bifid are, perhaps, *ignobilis*, Blackb.; *neglectus*, Blackb.; *lucidus*, Blackb.; *aridus*, Blackb.; and *diversiceps*, Blackb., but I do not think anyone would find any real difficulty even with them.

It must be noticed that in order to determine the form of the claw it is necessary to look at it with its compressed surface levelly opposite the eye. Viewed with the outer margin in that position many appendiculate claws appear simple, which, I have no doubt, accounts for the statement of Lacordaire and others that some *Heteronyces* have simple hind claws. Viewed obliquely from in front, so that the apical piece appears foreshortened, some appendiculate claws seem to be bifid.

A remark seems desirable on a character occasionally made use of in the tabulation of this and the next Group, *viz.*, the lateral projection of the clypeus, which is not a mere matter of degree, for where it passes the outline of the eye, as in the majority of *Heteronyces* it does, it is (I think invariably) of more or less angular form, whereas in those species where it does not pass the outline of the eye there is no angulation.

In this Group I have made little or no use of the comparative length, *inter se*, of the antennal joints, having not found sufficient variation in that respect to call for special remark, and in not a few species the antennal joints of the stipes are very short, and are difficult to examine without dissection.

External tridentation of the front tibiæ is so nearly a generic character in *Heteronyx* that I have not burdened my descriptions with a statement of the number of external teeth on the front tibiæ where that number is three.

The number of names of previously-described species clearly attributable (through either definiteness of description or my inspection of the type) to this Group is 20. One of these (*H. pellucidus*, Burm.) I have not been able to recognize among the *Heteronyces* known to me; it ought to be easily identified, as will appear on reference to my note concerning it (*vide infra*). Another of them (*H. subvittatus*, Macl., also noted below) is a synonym. I describe 14 new species in the following pages, bringing the number confidently attributable to the Group up to 33, one of them being omitted from the tabulation for the reason stated above. Besides these 33 there are 9 names of *Heteronyces* which (judged by the descriptions) probably appertain to either this or the next Group, but cannot be placed definitely without inspection of the types—presumably in Europe—in either Group, because the structure of the claws is not mentioned in the descriptions. It is quite likely that I may redescribe some of these, but as I have not access to the types I must run that risk. They will be enumerated in the supplement.

The following table indicates distinctive characters of the species known to me in this Group, below which will be found notes on some of the previously-described species, and then descriptions of the new species:—

- A. Flabellum of antennæ testaceous or brightly ferruginous.
- B. Hind coxæ about same length as metasternum covering (or all but) 1st ventral segment.
- C. Middle lobe of trilobed outline not more than half a lateral lobe.
- D. Hind claws strongly bifid, apical process not or scarcely longer than hinder process.
- E. Elytral punctures very close (20 from suture scarcely passing middle) sollicitus, *Blackb.*
- EE. Elytral punctures not very close (20 from suture passing middle strongly).

- F. Clypeus and frons form an almost continuous surface almost on one plane *Darwini*, *Blackb.*
- FF. Clypeus and frons very distinct; the latter separately convex *sequens*, *Blackb.*
- DD. Hind claws feebly bifid, apical process much longer than hinder process *ignobilis*, *Blackb.*
- OC. Middle lobe of trilobed outline much wider.
- D. Prothorax fully twice as wide as long.
- E. Trilobed outline strongly divided *rhinoceros*, *Blackb.*
- EE. Trilobed outline not or scarcely divided.
- F. Punctures of elytra very fine and close (20 from suture not passing middle) *bidentatus*, *Blackb.*
- FF. Punctures of elytra notably less fine and close (20 from suture pass middle strongly).
- G. Front tibiæ with only two external teeth *infirmus*, *Blackb.*
- GG. Front tibiæ with three external teeth.
- H. Clypeal suture strongly angular; size moderate (about $3\frac{1}{2}$ l.) *viduus*, *Blackb.*
- HH. Clypeal suture gently arched; size very small (about $2\frac{1}{2}$ l.) *pauillus*, *Blackb.*
- DD. Prothorax distinctly less than twice as wide as long.
- E. Clypeus and frons almost form a continuous plane; frons coarsely punctured.
- F. Clypeus projects laterally on either side beyond outline of eye *incola*, *Blackb.*
- FF. Clypeus not projecting beyond outline of eye *neglectus*, *Blackb.*
- EE. Planes of clypeus and frons very different; frons strongly convex, not coarsely punctured.
- F. Elytra non-striate, nitid *modestus*, *Blackb.*
- FF. Elytra conspicuously striate, subopaque *aridus*, *Blackb.*
- BB. Hind coxæ considerably shorter than metasternum (a wide strip of 1st ventral segment exposed).
- C. Lateral margin of pronotum conspicuously expanded (and its raised edging accentuated) close to front angles.

- D. Trilobed outline divided, strongly developed.
- E. Hind angles of prothorax quite sharply rectangular *rectangulus, Blackb.*
- EE. Hind angles of prothorax (from all points of view) obtuse or rounded off *disjectus, Blackb.*
- DD. Trilobed outline very feeble, not divided.
- E. Pronotum sparsely punctured (not more than 14 punctures in the length).
- F. Sides of prothorax well rounded (not less so than in *H. jubatus*)
- G. Labrum (viewed from in front) with a well-defined erect front face (resembling that of *H. elongatus*) *infuscatus, Macl.*
- GG. Labrum not having a distinct erect front face *rotundifrons, Blackb.*
- FF. Sides of prothorax scarcely rounded (greatest width across base).
- G. External teeth of front tibiæ very feeble and blunt *lucidus, Blackb.*
- GG. External teeth of front tibiæ strong and acute *fictus, Blackb.*
- EE. Pronotum much more closely punctured (about 20 fine punctures in length) *cribriceps, Blackb.*
- CC. Lateral margin of pronotum not expanded in front.
- D. Middle lobe of trilobed outline rounded.
- E. Punctures of pronotum numerous (at least 20 in the length).
- F. Elytral punctures moderate (15 from suture passing middle).
- G. Prothorax but little narrowed in front.
- H. Sides of prothorax lightly arched *borealis, Blackb.*
- HH. Sides of prothorax strongly rounded *pauper, Blackb.*
- GG. Prothorax very strongly narrowed in front *sordidus, Blackb.*
- FF. Elytral punctures extremely fine and close (15 from suture not reaching middle) *subfuscus, Macl.*
- EE. Punctures of pronotum notably less numerous.
- F. Trilobed outline strongly developed, strongly divided, middle lobe less than half a lateral lobe *humilis, Blackb.*

- FF. Trilobed outline not as r.
 G. Frons closely and rugulose sculptured; prothorax considerably narrowed in front.
 H. Size moderate ($3\frac{1}{2}$ l. or more).
 I. Elytral punctures sparse (10 from suture reach middle) ... sparsus, *Blackb.*
 II. Elytral punctures much more numerous ... cliens, *Blackb.*
 HH. Size very small ($2\frac{1}{2}$ l. or less) lividus, *Blackb.*
 GG. Frons smoothly, coarsely and not closely punctured; base and front of prothorax scarcely different in width diversiceps, *Blackb.*
 DD. Middle lobe of trilobed outline quite sharply angular acutifrons, *Blackb.*
 AA. Flabellum of antennæ dark (black or nearly so).
 B. Dorsal surface subopaque, punctures very lightly impressed, elytra with conspicuous obtuse costæ potens, *Blackb.*
 BB. Not as B.
 C. Lateral margin of pronotum widely expanded close to the front angles incultus, *Blackb.*
 CC. Lateral margin of pronotum even aphodioides, *Blanch.*

H. Darwini, *Blackb.* In the description of this species (*Proc. Linn. Soc., N.S.W., 1889, p. 435*) I called the tooth-like projection of the inner apex of the hind femora "strong but not sharp." This would be better expressed "strong but not very sharp," the projection being, as a fact, quite evidently sharper than in almost any other *Heteronyx* known to me: it is usually feeble and blunt.

H. sequens, *Blackb.* This species is somewhat close to *H. sollicitus*, *Blackb.*, but is a smaller insect, of lighter colour, with elytra less closely punctulate, and having the frons more convex so as to appear more distinct from the clypeus, with the clypeal suture more conspicuous. I have seen about a dozen specimens of *sequens* and about half that number of *sollicitus*.

H. pellucidus, *Burm.* The characters assigned to this species appear scarcely reconcilable with its being a true *Heteronyx*, especially the front claws of the male "strongly unequal," and the front tibiæ with two strong external teeth near the apex and a very small tooth close to the knee. There are *Heteronyces* (especially in Group VIII.) having a sexual difference in the front claws, but I have not observed any

with the claws unequal in either sex; the description of the front tibiæ reads like that of an *Automolus* rather than a *Heteronyx*. If those difficulties be waived it seems probable that the hind claws are bifid as the front claws of the male are said to be, and in that case the species falls into Group VII. of *Heteronyx*, and is probably not far removed from *H. bidentatus*, Blackb. The locality assigned to *pellucidus* is South Australia, where, however, I have no evidence of the occurrence of any species near *bidentatus*, and certainly it would not be practicable to identify *H. pellucidus* except by means of a specimen taken in Burmeister's locality. I conclude, therefore, that this species must remain an enigma until the type can be re-examined, or some insect agreeing with the description in respect of sexual characters can be found.

H. siccus, Blackb., and *H. Cowelli*, Blackb. These species were described as having bifid claws, and, therefore, might be looked for in this Group; their claws cannot, however, be considered bifid according to the more exact definition of terms that I have adopted for the purpose of the present Revision, and I therefore transfer them to Group VIII. *H. Cowelli* is, however, as noted under Group VIII., a synonym of *H. concolor*, Macl.

H. infuscatus, Macl. This species—the type of which I have examined in the Australian Museum—is very close to *H. rotundifrons*, Blackb. The distinction of labrum referred to in the tabulation is much like that between *H. granulatus* and *maurulus* of Group VI. (which is discussed under the heading of *H. maurulus*), and further differences are found in the notably smaller size of *H. infuscatus*, the considerably better-developed trilobed outline of the head in that species, its notably more convex frons, and its front tibiæ much more strongly and sharply dentate externally.

H. subfuscus, Macl. This species seems to be widely distributed in tropical Australia.

H. diversiceps, Blackb. This is the only *Heteronyx* known to me as occurring in Tasmania with bifid claws, and even of this species the claws cannot be called strongly bifid. As noted in the original description, this species is extremely difficult to place satisfactorily in any Group, and in my former Revision of this genus I assigned it to the "Intermediate" Group (now abolished), stating that the front of its head did not show a trilobed outline. That statement is not strictly correct, for (although from the ordinary point of view for examining the outline of the head that outline looks like an even curve) a threefold convexity is certainly visible if the head be viewed less obliquely—*i.e.*, from more directly above

it—a fact which I overlooked when I described the species. It would certainly be quite out of place in Group III., to which it would have to be referred if the front outline of its head were regarded as not trilobed.

H. potens, Blackb., and its allies. The species of this aggregate (of Group VII., having the antennal flabellum black) are incapable of confusion with any other *Heteronyces*, but are extremely closely allied, *inter se*, and variable—at any rate in respect of colour and size. I believe that I have before me at least six species of this aggregate, but three of them are represented by very few specimens, few of which are in satisfactory condition, and I do not feel justified in dealing with them. The species which I have called *potens* is usually named *aphodioides*, Blanch., but I think this a mistake, inasmuch as its general size is larger than that Blanchard attributes to his species; it is one of the most opaque of the *Heteronyces* (Blanchard calls his species “subnitidus”), and its dorsal puncturation is exceptionally lightly impressed (Blanchard calls the pronotum and elytra of his species “profunde punctata”). I have little doubt that the true *H. aphodioides* is a small *Heteronyx*, which I have seen only from Sydney and the immediate suburbs, and which answers very well indeed to Blanchard’s description. The three species characterized in the tabulation above are certainly all valid, and can easily be recognized by the characters cited. Besides these, I have before me two black specimens from Galston closely allied to *incultus*, but of wider and more depressed form, with the prothorax larger and more transverse; three specimens from Windsor possibly identical with the two from Galston, but entirely of a bright ferruginous colour, though apparently not immature, with only the antennal flabellum black; and a single specimen (in bad condition) from the Tweed River, near *potens*, but likely to prove distinct when a series of specimens in good condition can be examined.

H. sollicitus, sp. nov. Minus elongatus, postice sat dilatatus; minus nitidus: ferrugineus vel obscure brunneus, antennis palpisque sat pallidis; supra pilis minus brevibus adpressis nonnullisque erectis vestitus; clypeo (hoc antice late emarginato) fronteque sat æqualiter subrugulose punctulatis, ut plana parum disparia visis; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam lateralium dimidium angustiori); antennis 9-articulatis; prothorace quam longiori ut 9 ad 6 latiori, antice sat angustato, supra sat crebre minus subtiliter punctulato (puncturis circiter 24 in segmenti longitudine), lateribus (superne visis) sat arcuatis, angulis anticis sat acutis sat productis

posticis (superne visis) rotundato-obtusis, basi sat fortiter bisinuata, margine basali sat æquali; elytris crebre subtilius subaspere punctulatis (trans elytron puncturis circiter 36); pygidio leviter vel obsolete punctulato; coxis posticis quam metasternum haud brevioribus, quam segmentum ventrale 2^{um} multo longioribus; tarsorum posteriorum articulo basali quam 2^{us} sat breviori quam 3^{us} sub longiori; unguiculis bifidis. Long., $4\frac{1}{2}$ -5 l.; lat., $2\frac{1}{5}$ - $2\frac{3}{5}$ l.

This species is easily recognizable by the characters cited in the tabulation. I have before me specimens from North Queensland, Port Darwin, and North-West Australia which present slight differences, *inter se*, suggesting the possibility that investigation of more numerous examples may indicate their being distinct closely-allied species. In the Queensland specimen (the type) only, the pronotum is distinctly canaliculate, while that from North-West Australia only has some traces of elytral striation. It would not, however, be wise to treat them as specifically different without further evidence. The trilobed outline of the head in this species is strongly developed and divided.

North Australia (Mr. Perkins and Mr. Griffith).

H. ignobilis, sp. nov. Modice elongatus, postice sat dilatatus; ferrugineus; supra pilis minus brevibus adpressis nonnullisque erectis vestitus; clypeo crebre subrugulose punctulato, antice late emarginato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam lateralium dimidium paullo angustiori); fronte sat grosse minus crebre punctulata; hac clypeoque ut plana manifeste disparia visis; antennis 9-articulatis; prothorace quam longiori ut 8 ad 5 latiori, antice minus angustato, supra subtilius sat crebre punctulato (puncturis circiter 23 in segmenti longitudine), lateribus (superne visis) leviter arcuatis, angulis, anticis sat acutis sat productis posticis (superne visis) rotundato-obtusis, basi sat fortiter bisinuata, margine basali ad latera summa nonnihil magis elevato; elytris crebre sat subtiliter subaspere punctulatis (trans elytron puncturis circiter 40); pygidio obsolete sparsim punctulato; coxis posticis metasterno longitudine sat æqualibus, quam segmentum ventrale 2^{um} multo longioribus; tarsorum posteriorum articulo basali quam 2^{us} parum breviori quam 2^{us} parum longiori; unguiculis bifidis (minus fortiter). Long., 4 l.; lat., 2 l.

This species bears considerable resemblance to *H. sollicitus*, Blackb., but is easily separated from it by its very different hind claws, which are somewhat near the border line

between bifid and appendiculate structure, the hinder of their projections being a good deal smaller than the apical, though too distinctly in the form of a triangular tooth to allow of the claw being called appendiculate. Further differences are to be noticed in the smaller size of this species, its prothorax more transverse and less narrowed in front, and the very notably finer puncturation of its elytra. *H. ignobilis* also bears a general resemblance to *H. Macleayi*, Blackb., in Group VIII., which, however, has hind claws simply appendiculate, pronotum less closely punctured, basal joint of hind tarsi shorter, etc. In this species the trilobed outline of the head scarcely differs from that of *H. sollicitus*.

North Queensland (Mr. Perkins).

H. infirmus, sp. nov. Sat elongato-ovalis; sat nitidus; brunneo-testaceus; supra pilis brevibus suberectis sparsius vestitus; clypeo grosse rugulose punctulato, antice late vix emarginato, oculos in exterioriorem partem haud superanti; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sublatori); fronte sat crebre sat fortiter nec rugulose punctulata; hac clypeoque ut plana disparia visis; antennis 9-articulatis; prothorace quam longiori plus quam duplo latiori, antice vix angustato, supra subtilius sat crebre punctulato (puncturis circiter 20 in segmenti longitudine), lateribus (superne visis) modice rotundatis, angulis anticis rotundatis parum productis posticis (superne visis) rotundatis, basi haud sinuata, margine basali æquali; elytris nonnihil rugulosis, subtilius minus crebre punctulatis (trans elytron puncturis circiter 30); pygidio subtilius sat crebre punctulato; coxis posticis metasterno longitudine sat æqualibus, quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali quam 2^{us} parum breviori quam 3^{us} paullo longiori; unguiculus bifidis. Long., 4 l.; lat., 1 $\frac{3}{4}$ l.

The general resemblance of this species and its immediate allies is to *subferrugineus*, Burm., and its allies, and *angustus*, Blackb., and its allies, from both which aggregates their conspicuously bifid claws separate them without difficulty. The front tibiæ of this insect bidentate externally (the 3rd—uppermost—tooth being represented by a scarcely discernible inequality of outline) is an unusual character. The trilobed outline of the head is feebly developed and not at all divided, the lobes overlapping strongly, the middle lobe (labrum) unusually large, slightly wider than a lateral lobe. The general appearance is frail and slender for a *Heteronyx*.

Western Australia; Geraldton (Mr. Lea).

H. viduus, sp. nov. Sat elongato-ovalis; sat nitidus; brunneo-testaceus, capite rufescenti; supra fere glaber; clypeo crebre grosse ruguloso, antice subtruncato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales vix angustiori); fronte subtilius minus crebre nec rugulose punctulata; hac clypeoque ut plana valde disparia visis; sutura clypeali angulata; antennis 9-articulatis; prothorace quam longiori duplo latiori, antice parum angustato, supra subtiliter minus crebre punctulato (puncturis circiter 18 in segmenti longitudine), lateribus (superne visis) leviter rotundatis, angulis anticis sat acutis leviter productis posticis (superne visis) sat rotundatis, basi haud sinuata, margine basali æquali; elytris nullo modo rugulosis, sparsius subtilius punctulatis (trans elytron puncturis circiter 24); pygidio fere ut elytra punctulato, in media parte longitudinaliter lævi; coxis posticis metasterno longitudine sat æqualibus, quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali quam 2^{us} multo breviori, 3^o sat æquali; unguiculis bifidis. Long., 3½ l.; lat., 1½ l.

Structurally near the preceding (*H. infirmus*), but very distinct from it by the sharp well-defined 3rd (uppermost) external tooth of its front tibiæ, by the much finer and non-rugulose puncturation of its frons, by its clypeus projecting outward on either side distinctly beyond the contour of the eyes, by its pronotum much less closely punctulate in the lateral parts, by its elytra non-rugulose and less closely punctured, by the basal joint of its hind tarsi much shorter in proportion to the second joint, etc. The trilobed outline of the head resembles that of *infirmus*, but with the middle lobe less prominent and scarcely so wide.

North Queensland; Cairns (Mr. Lea).

H. paucillus, sp. nov. Modice elongatus, postice leviter dilatatus; sat nitidus; pallide brunneo-testaceus; supra fere glaber; clypeo crebre fortiter ruguloso, antice subtruncato, oculos in exteriorem partem haud superanti; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana lateralibus sat æquali); fronte subtiliter minus crebre nec rugulose punctulata; hac clypeoque ut plana sat disparia visis; sutura clypeali sat arcuata; antennis 9-articulatis; prothorace quam longiori duplo latiori, antice parum angustato, supra subtiliter crebrius punctulato (puncturis circiter 20 in segmenti longitudine), lateribus (superne visis) modice rotundatis, angulis anticis vix acutis parum pro-

ductis posticis (superne visis) rotundatis, basi haud sinuata, margine basali æquali; elytris vix rugulosis, subtilius minus crebre punctulatis (trans elytron puncturis circiter 24); pygidio sparsius subtilius punctulato; coxis posticis metasterno longitudine sat æqualibus, quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali quam 2^{us} paullo breviori, 3^o sat æquali; unguiculis bifidis. Long., 2½ l.; lat., 1¼ l.

A very small fragile species. The two specimens in my collection do not bear a label of locality, and their elytra being unfortunately opened apart, I am not sure that the measurement of width or the description of outline is quite exact. A (probably) third specimen is immature and too much broken for certain identification, but is labelled "Roe-buck Bay." This species may be distinguished among its near allies by its very small size alone, but differs also in respect of the characters indicated in the tabulation and in other characters cited in the description. The uppermost of the three external teeth on the front tibiæ is very small, but sharp and perfectly formed. The trilobed outline of the head scarcely differs from that of *H. viduus*.

Australia.

H. neglectus, sp. nov. Minus elongatus, postice sat dilatatus; sat nitidus; ferrugineus; supra pilis brevibus sat erectis minus crebre vestitus; clypeo crebre sat grosse ruguloso, antice late leviter emarginato, oculos in exteriorem partem haud superanti; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam lateralium dimidium sat latiori); fronte sat crebre sat grosse vix rugulose punctulata; hac clypeoque ut plana parum disparia visis; antennis 9-articulatis; prothorace quam longiori ut 16 ad 9 latiori, antice parum angustato, supra fortius minus crebre punctulato (puncturis circiter 16 in segmenti longitudine), lateribus (superne visis) sat arcuatis, angulis anticis sat obtusis minus productis posticis superne visis fere rotundatis, basi vix sinuata, margine basali sat æquali; elytris haud rugulosis, sparsius minus fortiter punctulatis (trans elytron puncturis circiter 24); pygidio sparsim minus fortiter punctulato; coxis posticis quam metasternum vix brevioribus quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali quam 2^{us} paullo breviori, 3^o sat æquali; unguiculis bifidis. Long., 4 l.; lat. 2 $\frac{1}{10}$ l.

I have hitherto confused this species with *H. incola*, Blackb., but am satisfied that it is distinct. It is a particu-

larly difficult species for a tabulation, because in two respects it is near the border land between aggregates. Its hind claws are not of the conspicuously bifid type, the hinder of their two projections being much smaller than the apical; the hinder projection, however, is decidedly more defined than that in any species whose claws I have called appendiculate, and is wide, with its apex truncate, the middle and front claws being, moreover, quite unmistakably of the bifid type. The prothorax of this species is very little less than twice as wide as long; by measurement it is *actually* less than twice, and when placed beside a species in which the prothorax is fully twice as wide as long it is quite apparent that the prothorax is less transverse. It will, however, be well to note that if the species were to be mistaken for one with the wider prothorax its place would be regarded as near *viduus* and *pauxillus*, to neither of which it bears much general resemblance, differing from the former, *inter alia*, by its coarsely-punctured frons nearly continuous in plane with the clypeus, and from the latter by its very much larger size, etc. It is easily separable from *incola* by the clypeal character indicated in the tabulation, and in addition the puncturation of its elytra is quite evidently finer, and the basal joint of its hind tarsi is quite evidently longer in proportion to the 2nd joint. The trilobed outline of its head is fairly well defined, but not quite divided, the middle lobe about two-thirds of a lateral lobe in size. The front of the pronotum bears a fringe of erect hairs, as in *incola*.

North Queensland.

H. modestus, sp. nov. Modice elongatus, postice leviter dilatatus; sat nitidus; ferrugineus; supra fere glaber, pilis perbrevibus perpaucis erectis vestitus (exemplo typico forsitan nonnihil abraso); clypeo crebre ruguloso, antice late leviter emarginato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales paullo angustiori); fronte subtiliter minus crebre nec rugulose punctulata; hac clypeoque ut plana sat disparia visis; antennis 9-articulatis; prothorace quam longiori ut 3 ad 2 latiori, antice leviter angustato, supra subtiliter minus crebre punctulato (puncturis circiter 18 in segmenti longitudine), lateribus (superne visis) sat arcuatis, angulis anticis vix acutis modice productis posticis (superne visis) sat rotundatis, basi vix sinuata, margine basali subtili æquali; elytris sat fortiter minus crebre punctulatis (trans elytron puncturis circiter 22); pygidio sparsius subtilius punctulato; coxis posticis quam metasternum vix brevioribus,

quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali quam 2^{us} multo, quam 3^{us} vix, breviori; unguiculis bifidis. Long., 3 l.; lat., 1½ l.

A distinct little species not likely to be confused with any other known to me. Its unusually narrow prothorax is noteworthy. Its trilobed outline is well defined but not divided, the middle lobe somewhat strongly prominent and about three-quarters of a lateral lobe in size.

North Queensland (Mr. Perkins).

H. rectangularis, sp. nov. Modice elongatus, postice paullo dilatatus; sat nitidus; ferrugineus; supra pilis minus brevibus sparsius vestitus; clypeo crebre subtilius ruguloso, antice late nonnihil emarginato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat angustiori); fronte fortius subrugulose punctulata; hac clypeoque ut plana valde disparia visis; antennis 9-articulatis; prothorace quam longiori ut 7 ad 4 latiori, antice leviter angustato, supra sparsius minus fortiter punctulato (puncturis circiter 16 in segmenti longitudine), lateribus (superne visis) minus arcuatis, angulis anticis sat acutis sat productis posticis (superne visis) acute rectis, basi sat fortiter bisinuata, margine basali sat æquali; elytris sat fortiter minus crebre punctulatis (trans elytron puncturis circiter 22); pygidio fortius crebrius punctulato; coxis posticis quam metasternum sat brevioribus quam segmentum ventrale 2^{um} sat longioribus; tarsorum posticorum articulo basali quam 2^{us} paullo breviori, quam 3^{us} sublongiori; unguiculis bifidis. Long., 4 l.; lat., 2 l.

The sharply-defined hind angles of the prothorax of this species are unusual; viewed obliquely from in front the pronotum is seen to be somewhat expanded and reflexed at the hind angles, but the actual raised edging is not accentuated. The trilobed outline of the head is very strongly developed and divided, the middle lobe about two-thirds of a lateral lobe in size.

South Australia; Pinnaroo (Mr. Griffith).

H. disjectus, sp. nov. Modice elongatus, postice leviter dilatatus; sat nitidus; ferrugineus; supra pilis brevibus erectis sparsim vestitus; clypeo crebre subtilius ruguloso, antice late leviter emarginato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat angustiori); fronte crebre subtilius nonnihil rugulose punctulata; hac

clypeoque ut plana parum disparia visis; antennis 9-articulatis; prothorace quam longiori ut 16 ad 9 latiori, antice sat angustato, supra crebrius subtilius punctulato (puncturis circiter 19 in segmenti longitudine), lateribus (superne visis) leviter arcuatis, margine laterali antice dilatato, angulis anticis sat acutis parum productis posticis (superne visis) obtusis, basi bisinuata, margine basali sat æquali; elytris crebrius sat fortiter punctulatis (trans elytron puncturis circiter 25); pygidio crebrius fortius punctulato; coxis posticis quam metasternum sat brevioribus, quam segmentum ventrale 2^{um} sat longioribus; tarsorum posticorum articulo basali quam 2^{us} sat breviori, quam 3^{us} sublongiori; unguiculis bifidis. Long., 4 l.; lat., 2 l.

Resembles the preceding (*H. rectangularis*), but with a very different prothorax, the hind angles viewed obliquely from the side being seen to be entirely rounded off, while in *rectangularis* they are from all points of view sharp right angles. Other differences will be noted by comparing the descriptions. The trilobed outline of the head is well defined, and is divided, but not so strongly as in *rectangularis*, the middle lobe a little more than two-thirds of a lateral lobe. Some specimens (apparently females) are a little broader and more ovate than the others. The type described above is a male.

Western Australia; Swan River (Mr. Lea).

H. lucidus, sp. nov. Modice elongatus, postice vix dilatatus; nitidus; piceo-ferrugineus, palpis antennisque dilutioribus; supra pilis minus brevibus erectis sparsim vestitus; clypeo crebre subtilius ruguloso, antice late sinuato; labro clypei planum vix superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat angustiori); fronte rugulose sat fortiter punctulata; hac clypeoque ut plana vix disparia visis; antennis 9-articulatis; prothorace quam longiori ut 9 ad 5 latiori, antice sat angustato, supra sparsim minus fortiter punctulato (puncturis circiter 13 in segmenti longitudine), lateribus parum arcuatis, margine laterali antice dilatato, latitudine majori ad basin sita, angulis anticis obtusis vix prominulis posticis (superne visis) sat acute rectis, basi sat fortiter bisinuata, margine basali sat æquali; elytris fortiter minus crebre punctulatis (trans elytron puncturis circiter 20); pygidio minus nitido sparsim subtilius punctulato; coxis posticis quam metasternum multo brevioribus, quam segmentum ventrale 2^{um} sat longioribus; tibiæ antice dentibus

externis obtusis; tarsorum posticorum articulo basali quam 2^{us} vix breviori, quam 3^{us} longiori; unguiculis bifidis. Long., $4\frac{1}{2}$ l.; lat., $2\frac{1}{4}$ l.

This species forms with *H. infuscatus*, Macl., *rotundifrons*, Blackb., and *fictus*, Blackb., an aggregate of closely allied species. From both the former two it differs, *inter alia*, very conspicuously by the nearly straight sides of its prothorax, which is at its widest across the base. From *H. fictus*, which resembles it in the shape of the prothorax, it differs by the character mentioned in the tabulation and also by the much less coarse puncturation of its dorsal surface. The trilobed outline of the head, though distinct, is very feebly developed and not divided, the middle lobe a little more than half a lateral lobe in size. My specimens of this insect are from New South Wales, but I am not sure of their exact habitat: I believe they were sent to me from Mulwala by Mr. Sloane.

New South Wales.

H. fictus, sp. nov. Modice elongatus, postice vix dilatatus; sat nitidus; ferrugineus; supra pilis erectis sat brevibus sparsius vestitus; clypeo crebre subtilius ruguloso, antice late sinuato; labro clypei planum vix superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat angustiori); fronte rugulose sat grosse punctulata; hac clypeoque ut plana minus disparia visis; antennis 9-articulatis; prothorace quam longiori ut 13 ad 8 latiori, antice sat angustato, supra sparsim sat grosse punctulato (puncturis circiter 12 in segmenti longitudine), lateribus parum arcuatis, margine laterali antice dilatato, latitudine majori ad basin sita, angulis anticis obtusis vix prominulis posticis (superne visis) rectis, basi sat fortiter bisinuata, margine basali sat æquali; elytris sat grosse minus crebre punctulatis (trans elytron puncturis circiter 18); pygidio minus nitido sparsim obsolete punctulato; coxis posticis quam metasternum multo brevioribus, quam segmentum ventrale 2^{um} sat longioribus; tibiis anticarum dentibus externis acutis; tarsorum posticorum articulo basali quam 2^{us} vix breviori, quam 3^{us} longiori; unguiculis bifidis. Long., 4 l.; lat., 2 l.

Closely associated with *H. lucidus* in respect of its more important structural characters, but differing from that species in the form of its front tibiæ and in the much coarser puncturation of its dorsal surface. The three specimens before me are all of smaller size and lighter colour than any specimen

that I have seen of *lucidus*. The trilobed outline of the head is like that of *lucidus*, but the middle lobe is narrower—scarcely more than half a lateral lobe.

New South Wales; Sydney and Jenolan Caves (Mr. Lea).

H. pauper, sp. nov. Minus elongatus, postice leviter dilatatus; modice nitidus; ferrugineus; supra pilis brevibus adpressis minus crebre vestitus; clypeo (hoc antice leviter emarginato) fronteque crebre rugulosis, ut plana minus disparia visis; labro clypei planum leviter superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat angustiori); antennis 9-articulatis; prothorace quam longiori ut 7 ad 4 latiori, antice minus fortiter angustato, supra crebrius minus fortiter punctulato (puncturis circiter 20 in segmenti longitudine), lateribus (superne visis) prope medium fortiter dilatato-rotundatis, margine laterali æquali, angulis anticis rectis leviter productis posticis (superne visis) rotundatis, basi vix bisinuata, margine basali æquali; elytris minute granulatis crebre subtilius leviter nec aspere punctulatis (trans elytron puncturis circiter 27); pygidio sparsim fortius punctulato; coxis posticis quam metasternum sat brevioribus quam segmentum ventrale 2^{um} paullo longioribus; tarsorum posticorum articulo basali quam 2^{us} manifeste breviori, quam 3^{us} paullo longiori; unguiculis bifidis. Long., 3 l.; lat., 1 $\frac{3}{5}$ l.

This species is near *H. borealis* and *sordidus*. From the former it is very easily distinguishable by the very much more strongly rounded sides of its prothorax. It is much closer to *H. sordidus*, from which it differs, however, by its evidently wider form; its prothorax less narrowed in front, with sides even more strongly rounded, greatest width nearer the middle, hind angles quite rounded off, and puncturation evidently a little stronger and less close; its elytral punctures a little less close, less strongly impressed, and not asperate; its hind coxæ very evidently shorter, etc. It bears much resemblance to several species near the end of Group VIII., from which its claws (all of them bifid) readily distinguish it.

North Queensland (Mr. Perkins).

H. sordidus, sp. nov. Modice elongatus, postice leviter dilatatus; minus nitidus; ferrugineus; supra pilis brevibus adpressis minus crebre vestitus; clypeo crebre ruguloso, antice leviter emarginato; labro clypei planum vix superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat angustiori); fronte rugulose sat grosse punctulata; hac clypeoque ut plana sat disparia visis; antennis 9-articulatis, brevibus;

prothorace quam longiori ut 7 ad 4 latiori, antice fortiter angustato, supra crebrius sat subtiliter punctulato (puncturis circiter 22 in segmenti longitudine), lateribus (superne visis) fortiter arcuatis pone medium dilatato-rotundatis, margine laterali æquali, angulis anticis obtusis parum productis posticis (superne visis) rotundato-obtusis, basi leviter bisinuata, margine basali æquali; elytris crebre subtilius nonnihil aspere punctulatis (trans elytron puncturis circiter 30); pygidio longitudinaliter carinato, sparsim grossius punctulato; coxis posticis quam metasternum sat brevioribus, quam segmentum ventrale 2^{um} sat longioribus; tarsorum posteriorum articulo basali quam 2^{us} manifeste breviori, quam 3^{us} paullo longiori; unguiculis bifidis. Long., $3\frac{2}{5}$ l.; lat., $1\frac{2}{5}$ l.

Not very close to any other species known to me, except *H. pauper*, but to a casual glance of very ordinary appearance, with much general resemblance to those small obscure-looking species which I have placed in the latter part of Group. VIII. (*H. parvulus*, Macl., etc.)—a resemblance which is shared by *H. infuscatus*, Macl., and several others near it in the tabulation. The sculpture of its dorsal surface and most of its other characters are much like those of *H. borealis*, Blackb., but it is very distinct from that species by the shape of its prothorax (strongly narrowed in front and with the sides strongly rotundate-dilatate behind the middle) and by the notably wider and less prominent middle lobe of the trilobed outline of its head; its trilobed outline being very feeble and not divided, with the middle lobe about three-quarters of a lateral lobe in size.

North Queensland (Mr. Perkins).

H. humilis, sp. nov. Modice elongatus, postice leviter dilatatus; sat nitidus; ferrugineus; supra pilis adpressis minus brevibus sparsius vestitus; clypeo sat grosse ruguloso, antice oblique elevato-truncato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam lateralium dimidium angustiori); fronte vix rugulose sat grosse punctulata; hac clypeoque ut plana valde disparia visis; antennis 9-articulatis; prothorace quam longiori ut 7 ad 4 latiori, antice fortiter angustato, supra minus crebre sat fortiter punctulato (puncturis circiter 18 in segmenti longitudine), lateribus (superne visis) sat fortiter arcuatis, margine laterali æquali, angulis anticis acutis sat productis posticis (superne visis) rotundato-obtusis, basi modice bisinuata, margine basali æquali; elytris crebrius

minus fortiter punctulatis (trans elytron puncturis circiter 28); pygidio crebrius minus fortiter punctulato; coxis posticis quam metasternum multo brevioribus, quam segmentum ventrale 2^{um} sat longioribus; tarsorum posticorum articulo basali quam 2^{us} sat breviori, 3^o sat æquali; unguiculis bifidis. Long., 3 $\frac{1}{2}$ l.; lat., 1 $\frac{2}{3}$ l.

The form of the clypeus is unusual, the middle appearing as if a small piece had been obliquely (from the dorsal surface downward and forward) sliced off, and the marginal edging following the outline of the truncature so formed. The front of the pronotum bears a fringe of long erect hairs; this is, I think, a character of some importance, but its value is discounted for practical purposes by the ease with which the hairs are rubbed off, so that it is difficult to be sure that their absence is not accidental unless one is sure that the specimen examined is not abraded. The trilobed outline of the head is strongly developed and strongly divided, the middle lobe a little less than half of a lateral lobe in size.

New South Wales; Young (Mr. Sloane).

H. cliens, sp. nov. Modice elongatus, postice parum dilatatus; sat nitidus; ferrugineus; supra pilis adpressis minus brevibus sparsius vestitus; clypeo (hoc antice rotundatim sat late emarginato) fronteque crebre sat grosse rugulosis ut plana parum disparia visis; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam lateralium dimidium sat angustiori); antennis 9-articulatis; prothorace quam longiori ut 7 ad 4 latiori, antice parum angustato, supra minus crebre sat fortiter punctulato (puncturis circiter 18 in segmenti longitudine), lateribus (superne visis) leviter arcuatis, margine laterali æquali, angulis anticis obtusis minus productis posticis (superne visis) rotundato-obtusis, basi modice bisinuata, margine basali æquali: elytris crebrius minus fortiter punctulatis (trans elytron puncturis circiter 28); pygidio crebrius minus fortiter punctulato; coxis posticis quam metasternum sat brevioribus, quam segmentum ventrale 2^{um} sat longioribus; tarsorum posticorum articulo basali quam 2^{us} paullo breviori, 3^o sat æquali; unguiculis bifidis. Long., 3 $\frac{2}{5}$ l.; lat., 1 $\frac{3}{5}$ l.

Easily distinguishable by the characters cited in the tabulation. Rather close to *H. humilis*, but differing by (in addition to the character cited in the tabulation) its prothorax much less narrowed in front (so that the segment looks more transverse, to a casual glance), its clypeus normally emarginate in front, its longer hind coxæ, etc. The trilobed out-

line of the head is not divided, the middle lobe not projecting nearly so far as the lateral lobes.

New South Wales; Queanbeyan (Mr. Lea).

GROUP VIII.

The division of the aggregate AA in this Group into two aggregates distinguished by the length of the hind coxæ is not quite so easy of application as the corresponding division in the other Groups, owing to the presence of a few species (mostly of abnormally elongate form), in which the hind coxæ do not quite fit any formula that is satisfactory in respect of the other species. Some remarks on these two aggregates (B and BB) of the aggregate AA, therefore, seem necessary. The normal condition of species of B is: hind coxæ as long (or all but as long) as the metasternum, at any rate very much nearer to the length of the metasternum than to that of the 2nd ventral segment, covering the 1st ventral segment (*i.e.*, that which is very narrowly visible between the hind trochanters as apparently the 1st ventral segment), or exposing only a very narrow strip of it (much narrower than half of the next segment). There are a few species which differ from the normal only in the exposure of an exceptionally wide strip of the 1st ventral segment, and these will present no difficulty, as they quite obviously belong to the aggregate with long hind coxæ. There is, however, one small aggregate which I have placed in B that undoubtedly seems to hover between B and BB. The species composing it are of more or less notably elongate form, the elongation being especially conspicuous in the ventral segments. The 1st ventral segment is widely exposed in them all, and in two of them (*longulus* and *lubricus*) the hind coxæ are very decidedly shorter than the metasternum, and, in fact, somewhat intermediate in length between the metasternum and the unusually elongate 2nd ventral segment—indeed, in *lubricus* they seem to be a trifle more nearly equal to the latter in length than to the metasternum. I think, however, that wherever they be placed they must be associated together, and as the three of them not already mentioned by name (*pallidulus*, Macl., *flavus*, Blackb., and *angustus*, Blackb.) have hind coxæ scarcely or very little shorter than the metasternum, and, therefore, would be much more out of place in BB than *longulus* and *lubricus* in B, it seems necessary to place them all in the aggregate B. They are easily recognizable species, having two characters which are unusual (especially in combination), *viz.*, the outline of the eye slightly passing, or, at any rate, fully reaching, that of the clypeus laterally; and the apex

of the lateral margin of the hind coxæ carinate and sub-spiniform. The last-mentioned character is not present in any species that I have placed in the aggregate BB. The normal condition of species of BB is: hind coxæ much shorter than metasternum, and not more nearly equal in respect of length to the metasternum than to the 2nd ventral segment (in many species very little longer than the 2nd ventral segment), the exposed part of the 1st ventral segment half (or even more than half) as long as the 2nd ventral segment. The only departure known to me in BB from the above described condition sufficiently marked to be worthy of mention is in a very small number of species (*e.g.*, *H. fumatus*, Er.) in which the hind coxæ are unduly longer than the 2nd ventral segment, but these insects have an unusually long metasternum (very considerably longer than the hind coxæ) and also have the 1st ventral segment largely exposed.

The aggregate B of AA, it will be observed, is divided into two sections (C and CC), distinguished by the elytra being either very closely punctulate or notably less closely punctulate—in the former section 20 punctures from the suture not passing the middle of the elytra. The only species that can be considered near the border line between these sections is *furvus*, Blackb. (of the aggregate CC), in which about 17 elytral punctures from the suture reach the middle.

The pronotum of many species of *Heteronyx* is fringed in front with long erect hairs, and I believe their presence or absence to be of value in distinguishing species, but as the hairs in question are very easily rubbed off, I have not considered it wise to make much use of the character. The pronotum and elytra are usually (probably always in fresh specimens) fringed laterally also, but I have not found that character to be of value for distinguishing species.

It will be noted that in this Group I have described the claws only of the hind tarsi. In all the species all the claws are appendiculate, I believe (except in a few species whose front claws are described), but the other characters ascribed to the hind claws are not in all cases exactly reproduced in the other claws.

In some species of this Group (and in some instances in other Groups) individual specimens have feeble indications of a longitudinal channel on the pronotum. Its distinctness is certainly variable within the limits of a species, and (in some species, at any rate) is dependent on the degree of maturity of the specimen. It does not seem to be a reliable character for diagnosis.

The number of names of previously - described species confidently attributable to this Group is 51. I add 27 new names in the following pages. There are also 10 previously-described species which cannot be confidently placed in any Group without inspection of types that are not in Australia, but which probably are members of this or the preceding Group. They will be found enumerated in the Supplement following. Three species (of the 51 mentioned above) are not placed in the tabulation (*vide infra*) as the types are in Sydney, and I have not been able to examine them. They are *Erichsoni*, Blackb., *marginatus*, Blackb., and *scutatus*, Macl. Five names (of the 51 mentioned above) are synonyms, and will be found enumerated in the Supplement. The remaining names are placed in the tabulation:—

- A. Male elytra black at base; pronotum clothed with long hairs in both sexes; elytra striate.
- B. Punctures of pronotum very close (10 from front not reaching middle),
- C. Antennal flabellum dark.
- D. Elytral interstices not conspicuously and evenly convex.
- E. Prothorax at its widest scarcely behind middle; sides very strongly rounded fallax, Blackb.
- EE. Prothorax at its widest considerably behind middle; sides only moderately rounded.
- F. All the elytral interstices flat, striæ very faint, basal black of male elytra wide dimidiatus, Er.
- FF. Alternate elytral interstices convex, striæ strong, basal black of male elytra narrow jubatus, Blackb.
- DD. Elytral interstices strongly and evenly convex striatipennis, Blanch.
- CC. Antennal flabellum testaceous fraternus, Blackb.
- BB. Punctures of pronotum much less close (10 from front well passing middle); antennal flabellum bright ferruginous hirtuosus, Blanch.
- AA. Species not combining the characters of A.
- (3) B. Hind coxæ not or but little shorter than metasternum (*vide supra* in general remarks).
- C. Elytral punctures very close (20 from suture not passing the middle).

(3) *H. longulus*, Blackb., and *lubricus*, Blackb., are on the border line of this aggregate.

- D. Hind claws elongate; apical piece not or scarcely shorter than basal, compressed and continuing general curve.
- E. Species of large size (more than 5 l.).
- F. Labrum (viewed from in front) having a widely-erect face.
- G. Elytral punctures excessively fine (much finer than in *H. jubatus*).
- H. Punctures of pronotum excessively fine, like those of the elytra.
- I. Species not having a conspicuous pencil of bristles at apex of suture.
- J. Whole surface of elytra bearing sparse minute granules emitting long erect hairs *pustulosus, Blackb.*
- JJ. Elytra not bearing (unless a few close to base) long erect hairs.
- K. Middle lobe of trilobed outline much more than half a lateral lobe *agrestis, Burm.*
- KK. Middle lobe of trilobed outline not more than half a lateral lobe *scalptus, Blackb.*
- II. Elytra having a conspicuous pencil of bristles at apex of suture *elongatus, Blanch.*
- HH. Punctures of pronotum much larger (as large as those on elytra of *H. jubatus*) *major, Blackb.*
- GG. Elytral punctures much less fine (scarcely finer than in *H. jubatus*) *rhinastus, Blackb.*
- FF. Labrum not showing an erect front face *xanthotrichus, Blackb.*
- EE. Species of much smaller size (less than 4 l.) *Waterhousei, Blackb.*
- DD. Hind claws smaller, apical piece much smaller than basal and usually much bent.
- E. Punctures of pronotum very small and close (10 from front not nearly reaching middle).

- F. Trilobed outline of head well defined, more or less divided.
- G. Front outline of clypeus not concave; clypeal suture strongly cariniform laminatus, *Blackb.*
- GG. Not with characters (in combination) of G.
- H. Basal joint of hind tarsi as long as 2nd joint; elytra not with long setæ subferrugineus, *Burm.*
- HH. Not with characters (in combination) of H.
- I. Puncturation of head rugulose and more or less coarse (not less so than in *H. jubatus*).
- J. Elytra (at any rate near apex) bearing long coarse bristles macilentus, *Blackb.*
- JJ. Elytra not bearing long bristles ... Helmsi, *Blackb.*
- II. Puncturation of head close, very fine, and scarcely rugulose ... doctus, *Blackb.*
- FF. Outline of head feebly trisinate, not at all divided peregrinus, *Blackb.*
- EE. Punctures of pronotum less close (10 from front nearly reach middle), and much larger Macleayi, *Blackb.*
- CC. Elytral punctures much less close (20 from suture considerably pass middle).
- D. Trilobed outline strongly divided, middle lobe half a lateral lobe, or less.
- E. Elytral punctures decidedly sparse (12 from suture reach at least to middle).
- F. Stipes of antennæ more elongate and slender, joint 3 quite conspicuously longer than joint 4.
- G. Prothorax much narrowed in front.
- H. Punctures of frons and pronotum similar in size.
- I. Lateral gutter of pronotum in front part conspicuously dilated with its lateral edging more raised ... vagans, *Blackb.*
- II. Lateral gutter of pronotum and its edging even or almost so ... conjunctus, *Blackb.*

- HH. Punctures of pronotum notably smaller than of frons *castaneus*, *Macl.*
- GG. Prothorax only very slightly narrowed in front *Olliffi*, *Blackb.*
- FF. Stipes of antennæ short and stout, joint 3 only slightly longer than 4.
- G. Punctures of frons and pronotum similar in size.
- H. Prothorax considerably narrowed in front ... *Erichsoni*, *Blackb.*
- HH. Prothorax only very slightly narrowed in front *mimus*, *Blackb.*
- GG. Punctures of pronotum notably smaller than of frons *farinensis*, *Blackb.*
- EE. Elytral punctures considerably more numerous (12 from suture not reaching middle)
- F. Lateral outline of prothorax (viewed from the side) strongly sinuate *Hackeri*, *Blackb.*
- FF. Lateral outline of prothorax (viewed from the side) straight *badius*, *Macl.*
- DD. Trilobed outline not as D.
- E. Size at least moderate (much more than long., 2 l.).
- F. Elytra not having a conspicuous transverse sulcus in apical part.
- G. Not iridescent.
- H. Punctures of pronotum very fine and close (20 from front scarcely reach middle) *mæstus*, *Blackb.*
- HH. Punctures of pronotum much less numerous.
- I. Postero-external angle of metasternum sub-spiniform; clypeus not angulate in front of eye and not passing outline of eye.
- J. Sutural apex strongly carinate and conspicuously prominent hindward ... *longulus*, *Blackb.*
- JJ. Sutural apex not as J.
- K. Basal piece of hind claws quite strongly compressed.

- L. Elytral punctures more sparse and deeply impressed (about 12 from suture reach middle) *angustus, Blackb.*
- LL. Elytral punctures conspicuously more close and faintly impressed ... *flavus, Blackb.*
- KK. Hind claws long, basal piece not compressed ...
- L. Apical piece of hind claws as long as basal *lubricus, Blackb.*
- LL. Apical piece of hind claws notably shorter *pallidulus, Macl.*
- II. Not combining the characters of I.
- J. Basal edging of pronotum strongly raised in its lateral parts; size large (about 6 l.) *amœnus, Blackb.*
- JJ. Basal edging of pronotum not or scarcely more raised laterally.
- K. Elytral punctures quite sparse (about 10 from suture reach middle).
- L. Joint 3 of antennæ not longer than joint 4 ... *siccus, Blackb.*
- LL. Joint 3 of antennæ considerably longer than joint 4 ... *ambiguus, Blackb.*
- KK. Elytral punctures much more numerous.
- L. Prothorax across apex of middle line not or scarcely narrower than across base.
- M. Clypeus and frons form a continuous even and evenly sculptured surface *planiceps, Blackb.*

- MM. Clypeus and frons very distinct and differently sculptured *collaris, Blackb.*
- LL. Prothorax across apex of middle line much narrower than across base.
- M. Punctures of elytra numerous (30 or thereabout across an elytron).
- N. Joint 3 of antennæ short (much shorter than 2 and about equal 4).
- O. Hind femora extremely wide; size larger (more than $4\frac{1}{2}$ l.) ... *furvus, Blackb.*
- OO. Hind femora normal; size smaller (less than 4 l.) ... *approximans, Blackb.*
- NN. Joint 3 of antennæ longer (scarcely shorter than 2 and notably longer than 4) ... *ordinarius, Blackb.*
- MM. Punctures of elytra much less numerous (about 22 across an elytron) ... *rusticus, Blackb.*
- GG. Iridescent beneath (dorsal surface pruinose) ... *iridiventris, Blackb.*
- FF. Elytra with a deep transverse sulcus immediately before apex ... *posticalis, Blackb.*
- EE. Size very small (less than 2 l.) ... *minutus, Blackb.*
- BB. Hind coxæ much shorter than the metasternum.
- C. Punctures of pronotum very fine and close (15 from front not or scarcely reaching middle).
- D. Trilobed outline divided; middle lobe not or scarcely more than half of a lateral lobe ... *puncticollis, Blackb.*
- DD. Trilobed outline not divided; middle lobe much larger ... *simius, Blackb.*
- CC. Punctures of pronotum much less numerous.
- D. Basal piece of hind claws strongly compressed; its inner outline quite straight, and parallel with the opposite outline.
- E. Elytral punctures not very close (about 15 from suture at least reach middle).
- F. Clypeus passes outline of eye and is angular, in front of eye ... *montanus, Blackb.*
- FF. Clypeus not passing outline of eye and not angular ... *miser, Blackb.*

- EE. Elytral punctures notably closer (15 from suture not very nearly reaching middle) substriatus, *Macl.*
- DD. Hind claws not as D.
- E. Punctures of pronotum very much smaller and closer than of elytra.
- F. Hind series of large punctures on hind femora well separated throughout from hind margin nudus, *Blackb.*
- FF. Hind series of large punctures on hind femora fringes hind margin in apical part Rothei, *Blackb.*
- EE. Punctures of pronotum very much smaller and less close than of elytra impar, *Blackb.*
- EEE. Punctures of dorsal surface not as E or EE.
- F. Lateral sulcus of pronotum close to apex conspicuously expanded, with its edging more raised.
- G. Elytra not clothed with long erect hairs fumatus, *Er.*
- GG. Elytra clothed with long erect hairs hirsutus, *Blackb.*
- FF. Lateral sulcus of pronotum not or scarcely perceptibly expanded in front.
- G. Elytra glabrous or with only extremely short (usually extremely sparse) hairs.
- H. Elytral punctures not very close (12 from suture reach or pass middle).
- I. Pronotum but little convex, viewed from the side.
- J. Hind angles of pronotum viewed from above well marked subglaber, *Macl.*
- JJ. KK. Hind angles of pronotum viewed from above rounded off nigrinus, *Blackb.*
- II. Pronotum strongly convex, viewed from the side convexicollis, *Blackb.*
- HH. Elytral punctures much closer (12 from suture not nearly reaching middle) vacuus, *Blackb.*
- GG. Pilosity of elytra normally long and close.

- H. Basal edging of pronotum unusually thick and strongly raised ... oscillator, *Blackb.*
- HH. Basal edging of pronotum fine and not raised above the general surface.
- I. Raised lateral edging of elytra continuous to sutural apex (apex not fringed with bristles).
- J. Pygidium non-carinate parvulus, *Macl.*
- JJ. Pygidium longitudinally carinate ... calidus, *Blackb.*
- II. Raised lateral edging of elytra not nearly continuous to sutural apex.
- J. Raised lateral edging ends on extreme margin of elytra.
- K. Lateral margins of prothorax diverge hindward much beyond middle (as much as in *H. jubatus*) inconspicuous, *Blackb.*
- KK. Lateral margins of prothorax diverge hindward but little beyond middle.
- L. Elytra unicolorous.
- M. Claws subbifid concolor, *Macl.*
- MM. Claws normally appendiculate (and very small) subcylindricus, *Blackb.*
- LL. Suture dark suturalis, *Blackb.*
- JJ. Raised lateral edging ends on apical part of elytra at base of apical membrane.
- K. Elytral punctures fine and close (15 from suture scarcely reach middle) puer, *Blackb.*
- KK. Elytral punctures less fine and close (12 from suture reach middle) ... mildurensis, *Blackb.*

H. dimidiatus, Er., and its allies. The species forming the aggregate A in my tabulation of characters in this Group are very distinct from all other *Heteronyces* known to me, not only by the combination of characters indicated in the tabulation, but also by the presence of an unusually well-marked difference between the sexes in respect of the front claws, the basal piece of those claws bearing on the inner margin in the male a laminiform process of more or less quadrate form, which, however, is feebly represented in the female also (the basal piece in the female being of a conspicuously compressed form). The males, moreover (in all the species of which I know the sexes with certainty) differ from the females in the presence of dark colouring on the basal part of the elytra. In this aggregate must be placed a species represented by a female example in the Macleay Museum ticketed with one of Mr. W. S. Macleay's labels bearing the name "*Cotidia australis*, Gory," under which name there is a quasi-description in Boisduval's memoir in the "Voyage de l'Australabe." The name "*australis*," however, had been used previously by Guérin for a *Heteronyx* from Tasmania which could not be identified or even referred to one of my Groups without examination of the type, as there is no reference to the labrum in the description; but there is nothing in the brief description inconsistent with its being a member of this present aggregate. The size given by Guérin (long., 11 mm.), nevertheless, points to its probably belonging to some other aggregate (probably Group IV.), and the locality renders it improbable that in any case *Cotidia australis* is identical with it. *Heteronyx* (*Cotidia*) *australis*, Gory (apparently a MS. name adopted by Boisduval) must, therefore, be regarded as a *nom. præ-occ.* I described the same species (Proc. Linn. Soc., N.S.W., 1889, p. 672) under the name *fallax*, which, consequently, must stand as its name. The species of this aggregate are for the most part easy of identification, *inter se*, as will be seen by a reference to the tabulation. There are two of them, however, about which I am in some difficulty (*H. dimidiatus*, Er., and *H. jubatus*, Blackb.), to the extent that I am not quite certain regarding their females, inasmuch as I have not seen a female likely to be *dimidiatus* from the original locality (Tasmania), nor one from any other locality identical with any locality from which I have the male of *dimidiatus*. I have before me, however, a female from the Jenolan Cave district, and another from Armidale, which I cannot separate from male *dimidiatus* by any character not likely to be sexual. The males of *dimidiatus*, Er., and of *jubatus*, Blackb., are quite easy to distinguish from each other, the former being of narrow elongate form—the prothorax especially narrow, its

width not more than a third of the whole length of the insect—and its elytra with striæ very faintly defined, interstices equal, *inter se*, and flat, and fully the basal third black. The male of *jubatus* is a much more robust and less elongate insect—its elytra with well-impressed striæ, interstices (especially the alternate ones) distinctly convex, and the base only very narrowly black. The female of *jubatus* scarcely differs from the male except in respect of sexual characters, which however, include the absence of black colouring on the elytra and variably lighter colouring in general of the pronotum and under-surface. The specimens referred to above as probably females of *dimidiatus* differ from the males of that species only as the females of *jubatus* differ from their males, although, however, they are of a little more robust form than I should expect in female *dimidiatus*. Both species are fairly common. I have seen *jubatus* from South Australia, Victoria, and New South Wales; *dimidiatus* from Tasmania, South Australia, Victoria, and (if the females mentioned above are rightly identified) New South Wales. The following I regard as varieties, but they may prove to represent distinct species: (*a*) *jubatus*, var. female, entirely ferruginous except frons and antennal flabella, convexity of alternate interstices feeble (from Murray Bridge); (*b*) *jubatus*, var. male, the parts usually black are pale fuscous, not much darker than the other parts, male character of claws feeble (from Sydney); *dimidiatus*, var. male and female (very likely to be found a distinct species when more specimens can be examined) striæ more strongly impressed in both sexes, male elytra with basal half black, form a little less elongate (from Gisborne, Victoria).

H. striatipennis, Blanch. Of this species I have seen only a single female, which differs from the male (the only sex previously described) as does the female of *jubatus* from its male.

H. hirtuosus, Blackb. Varies a good deal in colouring. I described four varieties. It may be noted that all the specimens with dark colouring on the elytra are males.

H. jubatus, Blackb. For notes on this species see above, under *H. dimidiatus*, Er. In describing it I expressed doubt of its distinctness from *H. striatipennis*, Blanch., which I had not then seen. It is, however, quite distinct, differing in its wider and less cylindrical form as well as in the sculpture of its elytra.

H. fraternus, Blackb. This species is in the unfortunate position of the type having perished. It was described on a unique example in the collection of the late Mr. J. Anderson. During the long illness of that gentleman (by whose

death science lost a most assiduous student) his collection fell into decay, and the specimen of *H. fraternus* has disappeared. In my own collection there is a specimen from the same locality as the type (Port Lincoln) which I compared many years ago with the type and labelled "apparently *H. fraternus* abraded." It must be noted that there is a doubt whether this species was rightly associated in the same aggregate as *jubatus*, Blackb. (where I then placed it), as I had not then observed the peculiar sexual characteristics common to *jubatus* and its allies. If the type was a female (as my abraded specimen seems to be) it is probable that the discovery of the male would confirm the association of the species with *jubatus*, but if the type was a male the species would probably have to be removed from the aggregate A to AA, in which case it would stand beside *H. waterhousei*, Blackb., differing from it by, *inter alia*, the very much closer puncturation of its pronotum.

H. pubescens, Macl. For this *nom. præoce* (previously used by Erichson, Weigm. Arch., 1842, I., p. 164) I propose the name *Erichsoni*.

H. sydneyanus, Blackb. In the original description of this species (Proc. Linn. Soc., N.S.W., 1890, p. 559) it was referred to the aggregate that is now Group VIII., with a note on the middle lobe of the trilobed outline of its head not forming a convex curve. As the Groups are characterized in this present Revision that character removes the species from Group VIII. to Group IV., where it will be found placed in the second subgroup. I accidentally omitted mention of this matter under the heading of Group IV.

H. vagans, Blackb. When I described this species I referred to it some specimens from Queensland which, however, I am now satisfied represent a distinct species. *H. vagans* and its allies are among the most difficult of the Australian *Heteronyces*, there appearing to be at least five species so closely allied that they could not be satisfactorily treated without the comparison of quite fresh well-mounted specimens, whereas of two of them the specimens before me are by no means in good condition. *H. vagans* I have not seen from any locality north of the Sydney district (the type is from Albury). It differs from the others of the aggregate, especially by, in combination, its prothorax considerably narrowed in front and the 3rd joint of its antennæ conspicuously more elongate. From the Tweed River I have received a species (which I describe as *H. Olliffi*), differing from the others by its almost black colour and its remarkably quadriform prothorax (the width of which across the point where the middle line meets the front margin is not appreciably less than across

the base); its antennæ are like those of *H. vagans*. Specimens from Queensland (*H. Erichsoni*, Blackb. = *pubescens*, Macl.) are extremely close to *vagans*, but with the prothorax very evidently less narrowed in front and the 3rd joint of the antennæ very much shorter. A badly-mutilated example from North-West Australia is near those from Queensland, but with the middle lobe of the trilobed outline of the head remarkably minute, the prothorax evidently more transverse, and probably other distinctions in the numerous parts of the body that are wanting. Finally, a specimen taken by the Horn Expedition in Central Australia has the prothorax of *vagans*, but with dorsal sculpture notably less rugulose, and the 3rd antennal joint distinctly shorter. In the original description of *H. vagans* the middle lobe of the trilobed outline of the head was called "about a quarter" of a lateral lobe; this somewhat unduly minimized it, and "a third" would be more accurate.

H. badius, Macl. I have found it necessary to tabulate the distinctive character of this species as consisting in the punctures of its elytra being more numerous than in the other species of the aggregate CC in AA, B, but not sufficiently numerous to associate it with those of C in AA, B. The fact is, the aggregates C and CC (*badius* being disregarded) are so particularly satisfactory that it would be undesirable to give them up for the sake of one species. Moreover, *badius* does not really confuse the tabulation, for, although its elytra are punctured much more closely than those of the other species of CC, it is not at all likely to be supposed a member of C, inasmuch as 20 punctures from the suture reach quite clearly beyond the middle of an elytron, across the whole elytron there being just about 30 punctures. In general appearance it is distinctly suggestive of the species described below as *H. Macleayi*, from which, however, it differs by several characters besides the puncturation, especially by its prothorax being considerably narrower in front, with front angles notably less produced.

H. subglaber, Macl. The type of this species is from North-West Australia. There are before me specimens from various localities in Northern Australia (scarcely any of them in really good condition) which I do not feel justified in describing as distinct species, but among which I have little doubt there are in reality several species closely allied to *subglaber*. They all agree with *subglaber*, and differ from *H. nigrinus* and *convexicollis* in the well-defined hind angles of their prothorax, which from certain points of view might almost be called "sharply rectangular." In the description of *subglaber* mention is made of a fovea on each side of the pro-

notum near the hind angles. This appears to be merely the depression which is more or less distinctly traceable at no great distance from the hind angles in most (if not all) *Heteronyces*. It certainly varies in *distinctness* within the limits of a species, but I think there are slight differences in its exact *position* on the pronotum which are probably specific; I have not, however, been able to regard this character as available for distinguishing species, on account of the differences of position being slight and the difference in distinctness being so variable as it is. I have a specimen from North-West Australia (certainly *subglaber*) in which the impression is scarcely traceable.

H. Cowelli, Blackb. An examination of the type specimen of *H. concolor*, Macl., has satisfied me that it is identical with *H. Cowelli*, and consequently the latter name must be dropped. *H. concolor* is not identical with the species which I referred to in Proc. Linn. Soc., N.S.W., 1889, p. 682, as probably that insect.

H. major, sp. nov. Modice elongatus, postice sat dilatatus; minus nitidus; obscure fuscus, antennis palpisque ferrugineis; supra pilis adpressis brevibus sat dense vestitus, pronoto antice pilis elongatis erectis fimbriato; clypeo crebre subtilius ruguloso, antice late leviter emarginato; labro clypei planum superanti, antice late perpendiculari; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat angustiori); fronte crebre aspere minus subtiliter punctulata; hac clypeoque ut plana sat disparia visis; antennis 9-articulatis; prothorace quam longiori ut 14 ad 9 latiori, antice sat fortiter angustato, supra crebre sat subtiliter nec leviter punctulato (puncturis circiter 40 in segmenti longitudine), lateribus (superne visis) sat arcuatis, angulis anticis sat acutis sat productis posticis (superne visis) rotundato-obtusis, basi sat fortiter bisinuata, margine basali sat æquali; elytris longitudinaliter vix obsolete costulatis, confertim subtiliter minus leviter punctulatis (trans elytron puncturis circiter 50); pygidio crebre subtilius nec leviter punctulato; coxis posticis quam metasternum haud brevioribus, quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali quam 2^{us} sat breviori, 3^o sat æquali; unguiculis posticis elongatis appendiculatis, parte basali quam apicalis vix longiori. Long., 8 l.; lat., 3 $\frac{1}{2}$ l.

One of the large species of the genus, and bearing much general resemblance to all the other species of the aggregate C in AA, B. It is, however, quite easily distinguishable

from them all by the characters cited in the tabulation. The apex of its elytral suture might, perhaps, be thought capable of confusion with that part of *H. elongatus* as having a pencil of bristles, but in this species similar bristles are closely placed along the whole apex of the elytra, and in *elongatus* are confined to the apex of the suture. The sculpture of its dorsal surface is very widely different from the corresponding sculpture in *elongatus*. The trilobed outline of the head is well developed and is divided, the middle lobe scarcely two-thirds of a lateral lobe in size. The outline of the erect face of the labrum (viewed from in front) is that of a segment of a circle (the normal condition in species whose head shows a trilobed outline).

New South Wales; Picton (Mr. Griffith).

H. xanthotrichus, sp. nov. Minus *elongatus*, postice minus dilatatus; minus nitidus; obscure ferrugineus; supra pilis adpressis brevibus sat dense vestitus, pronoto antice pilis elongatis erectis flavis fimbriato; clypeo crebre subtilius ruguloso, antice late leviter emarginato; labro clypei planum superanti, antice haud perpendiculari; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat angustiori); fronte crebre subtilius leviter punctulata; hac clypeoque ut plana minus disparia visis; antennis 9-articulatis; prothorace quam longiori ut 12 ad 7 latiori, antice modice angustato, supra confertim subtiliter sat leviter punctulato (puncturis circiter 40 in segmenti longitudine), lateribus (superne visis) leviter arcuatis, angulis anticis sat acutis sat productis posticis (superne visis) rotundato-obtusis, basi sat fortiter bisinuata, margine basali ad latera summa paullo magis elevato; elytris sat obsolete nonnihil costulatis, confertissime subtilissime leviter punctulatis (trans elytron puncturis circiter 60); pygidio crebre subtiliter punctulato; coxis posticis quam metasternum haud brevioribus, quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali quam 2^{us} sat breviori, 3^o sat æquali; unguiculis posticis elongatis appendiculatis, parte basali quam apicalis vix longiori. Long., 6 l.; lat., 3 l.

The form of the labrum (not turned up perpendicularly in its apical part, but having its whole direction forward and upward) distinguishes this species readily from the others of its aggregate (C in AA, B). The trilobed outline of the head is well developed and is divided, the middle lobe a little more than half of a lateral lobe in size. *H. xanthotrichus* is near-

est to *agrestis*, Burm., having very similar dorsal sculpture, but, *inter alia*, the trilobed outline of its head is better developed, with narrower middle lobe. It also is somewhat close to *scalptus*, Blackb., in respect of dorsal sculpture, but its elytra have not the fine transverse wrinkling so evident in *scalptus*. The elongate hairs and bristles of its surface (*e.g.*, those on the tibiæ and those fringing the elytra) seem to have a more definitely yellow tone of colour than in some species; but this is, of course, a character of little importance, and may not be so conspicuous in all specimens if the general colour is at all variable.

Victoria and South Australia.

H. Waterhousei, sp. nov. Minus elongatus, postice minus dilatatus; minus nitidus; ferrugineus; supra pilis adpressis brevibus sat dense vestitus, pronoto antice pilis erectis fimbriato; clypeo crebre subtilius ruguloso, antice subtruncato, oculos in exteriorem partem haud superanti; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales paullo angustiori); fronte subtilius sat crebre punctulata; hac clypeoque fere planum continuum efficientibus; antennis 9-articulatis; prothorace quam longiori ut 7 ad 4 latiori, antice minus angustato, supra subtiliter sat crebre punctulato (puncturis circiter 26 in segmenti longitudine), lateribus (superne visis) sat arcuatis postice nonnihil dilatato-rotundatis, angulis anticis subrectis parum prominulis posticis (superne visis) rotundato-obtusis, basi leviter bisinuata, margine basali sat æquali; elytris subtiliter confertim punctulatis (trans elytron puncturis circiter 50); pygidio crebre subtiliter punctulato; coxis posticis quam metasternum vix brevioribus quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali quam 2^{us} sat breviori 3^o sat æquali; unguiculis posticis elongatis appendiculatis, parte basali quam apicalis parum longiori. Long., 3 $\frac{2}{5}$ l.; lat., 1 $\frac{4}{5}$ l.

An isolated species resembling in respect of its general characters those of the aggregate DD of AA, B, but having claws like those of the aggregate D. Its superficial resemblance to *H. laminatus*, Blackb., is very marked, but it differs (independently of the claw structure) from that species by numerous characters—*e.g.*, middle lobe of trilobed outline much narrower and less prominent, and the punctures of its pronotum less close and considerably finer and of its elytra very evidently finer. The third (uppermost) external tooth of its front tibiæ is scarcely defined. The trilobed outline of the

head is well defined, but scarcely divided, the middle lobe a little more than two-thirds of a lateral lobe in size. I have named this species after the late Mr. G. R. Waterhouse, who did valuable work on Australian *Melolonthidæ*.

Western Australia; Eyre's Sandy Patch.

H. macilentus, sp. nov. Modice elongatus, postice vix dilatatus; minus nitidus; obscure fuscus, corpore subtus antennis palpis pedibusque ferrugineis; supra pilis brevibus adpressis et nonnullis (præsertim in pronoto antice et in elytris postice) elongatis erectis vestitus; clypeo (hoc antice late perleviter emarginato) fronteque crebre sat fortiter rugulosis, fere planum continuum efficientibus; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales parum angustiori); antennis 9-articulatis; prothorace quam longiori ut 13 ad 7 latiori, antice modice angustato, supra crebre subtiliter punctulato (puncturis circiter 32 in segmenti longitudine), lateribus (superne visis) leviter arcuatis, angulis anticis sat acutis modice productis posticis (superne visis) rotundo-obtusis, basi vix manifeste bisinuata, margine basali ad latera summa manifeste magis elevato; elytris longitudinaliter sat obsolete striatis, confertim subtilissime punctulatis (trans elytron puncturis circiter 50), in parte apicali summa prope suturam breviter longitudinaliter carinato; pygidio sat crebre minus fortiter punctulato; coxis posticis quam metasternum haud brevioribus, quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali quam 2^{us} vix breviori quam 3^{us} multo longiori; unguiculis posticis appendiculatis, parte basali quam apicalis multo longiori. Long., 3 l.; lat., 1 $\frac{2}{3}$ l.

I believe the unique type of this species to be more or less abraded; the elongate setæ of its dorsal surface may be, therefore, more numerous in a fresh specimen. The sex of the type is doubtful. If it is a female there is a possibility of its being a member of the aggregate A, but that seems improbable on account of its front claws not having the compressed form which is quite conspicuous even in the females of the species that I have placed in A. If it were in A it would stand beside *H. fraternus*, Blackb., from which it differs by, *inter alia*, the basal joint of the hind tarsi very much longer in proportion to both the 2nd and 3rd joints. The trilobed outline of the head is well developed and lightly divided, with the middle lobe scarcely smaller than a lateral lobe. The small carina near the apex of the suture is remarkable, and may be sexual.

South Australia; Yorke Peninsula.

H. Macleayi, sp. nov. Minus elongatus, postice parum dilatatus; minus nitidus; fuscus, corpore subtus antennis palpis pedibusque dilutioribus; supra pilis brevibus adpressis sat dense et nonnullis erectis sat brevibus vestitus; clypeo crebre sat fortiter ruguloso, antice late leviter emarginato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam lateralium dimidium subangustiori); fronte sat crebre fortius sat rugulose punctulata; hac clypeoque ut plana sat disparia visis; antennis 9-articulatis; prothorace quam longiori ut 15 (vix) ad 8 latiori, antice modice angustato, supra sat crebre subfortiter punctulato (puncturis circiter 22 in segmenti longitudine), lateribus (superne visis) modice arcuatis, angulis anticis sat acutis modice productis posticis (superne visis) obtusis, basi sat fortiter bisinuata, margine basali ad latera vix magis elevato; elytris longitudinaliter obtuse vix manifeste costulatis, crebre subtiliter punctulato (trans elytron puncturis circiter 43); pygidio subtilius crebrius (maris minus crebre) punctulato; coxis posticis quam metasternum haud brevioribus, quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali quam 2^{us} sat breviori 3^o sat æquali; unguiculis posticis appendiculatis, parte basali quam apicalis multo longiori. Long., 4½-5 l.; lat., 2¼-2½ l.

I formerly supposed this species to be *castaneus*, MacL. (and may have reported it to correspondents as probably that insect), there being no character in Macleay's brief description inconsistent with that determination, but an examination of the type has proved the contrary. The species is very easily identified (among all known to me) by the characters cited in the tabulation. The trilobed outline of the head is very well developed and is strongly divided, the middle lobe scarcely half of a lateral lobe in size. The punctures of the pronotum are very considerably larger than of the elytra.

North Queensland; Cairns, etc.

H. Olliffi, sp. nov. Modice elongatus, postice minus dilatatus; sat nitidus; nigro-piceus, antennis palpis pedibusque ferrugineis, corpore subtus plus minusve rufescenti; supra pilis brevibus suberectis sat dense vestitus; clypeo (hoc antice perleviter emarginato) fronteque crebre rugulose sat grosse punctulatis, ut plana sat disparia visis; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales fere quadruplo angustiori); antennis 9-articulatis, articulo 3^o quam 2^{us} parum breviori quam 4^{us} multo longiori; prothorace quam longiori ut 9 ad 5

latiori, antice perparum angustato, supra fortiter sat crebre punctulato (puncturis circiter 20 in segmenti longitudine), sulco laterali antice fortiter dilatato, lateribus (superne visis) fere ad apicem sat rectis, angulis anticis acutis fortiter productis posticis (superne visis) rectis, basi sat fortiter bisinuata, margine basali ad latera summa magis elevato; elytris fortiter sat crebre punctulatis (trans elytron puncturis circiter 25); pygidio sparsim sat fortiter punctulato; coxis posticis quam metasternum paullo brevioribus quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali quam 2^{us} paullo breviori, 3^o sat æquali; unguiculis posticis appendiculatis, parte basali quam apicalis multo longiori. Long., 4 $\frac{2}{3}$ l.; lat., 2 $\frac{1}{2}$ l.

A very easily recognizable species, especially in respect of the characters mentioned above under the heading of *H. vagans*, Blackb. The trilobed outline of the head is strongly divided, the middle lobe very little more than a quarter of a lateral lobe in size.

New South Wales; Tweed River (given to me by the late Mr. Olliff).

H. Erichsoni, sp. nov. New name for *H. pubescens*, Macl. (nom. præoc.).

H. conjunctus, sp. nov. Modice elongatus, postice minus dilatatus; modice nitidus; ferrugineus; supra pilis brevibus suberectis et nonnullis erectis sat elongatis vestitus; clypeo sat grosse sat rugulose punctulato, antice late leviter emarginato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana lateralium dimidio sat æquali); fronte sat grosse vix rugulose punctulata; hac clypeoque ut plana sat disparia visis; antennis 9-articulatis, articulo 3^o quam 4^{us} multo longiori; prothorace quam longiori ut 9 ad 5 latiori, antice modice angustato, supra sparsius sat fortiter punctulato (puncturis circiter 16 in segmenti longitudine), lateribus (superne visis) minus arcuatis, sulco laterali sat æquali, angulis anticis acutis sat productis posticis (superne visis) rotundato-rectis, basi fortiter bisinuata, margine basali sat æquali; elytris sat fortiter sat crebre punctulatis (trans elytron puncturis circiter 25); pygidio sparsius leviter punctulato; coxis posticis quam metasternum parum brevioribus, quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali quam 2^{us} sat breviori quam 3^{us} sublongiori; unguiculis posticis appendiculatis, parte basali quam apicalis multo longiori. Long., 4 l.; lat., 2 l.

Besides the distinctive characters indicated in the tabulation it may be noted that this species differs from most of the nearly allied species (as will be seen by comparing the descriptions) by the decidedly less numerous punctures of its pronotum. The trilobed outline of the head is well developed and is divided (but not strongly), its middle lobe just about half a lateral lobe in size.

North Queensland (Mr. Perkins).

H. farinensis, sp. nov. Modice elongatus, postice parum dilatatus; minus nitidus; ferrugineus; supra pilis brevibus suberectis et nonnullis erectis magis elongatis vestitus, pronoto antice pilis sat longis fimbriato; clypeo (hoc antice leviter emarginato) fronteque crebre fortiter rugulosus, ut plana sat disparia visis; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales multo angustiori); antennis 9-articulatis, articulo 3^o quam 4^{us} vix longiori; prothorace quam longiori ut 9 ad 5 latiori, antice sat angustato, supra crebrius minus fortiter punctulato (puncturis circiter 21 in segmenti longitudine), lateribus (superne visis) sat arcuatis, sulco laterali sat æquali, angulis anticis sat acutis minus productis posticis (superne visis) obtusis, basi sat fortiter bisinuata, margine basali sat æquali; elytris sat fortiter sat crebre punctulatis (trans elytron puncturis circiter 27); pygidio leviter minus crebre punctulato; coxis posticis quam metasternum paullo brevioribus quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali quam 2^{us} sat breviori, 3^o sat æquali; unguiculis posticis appendiculatis, parte basali quam apicalis multo longiori. Long., 4½ l.; lat., 2¼ l.

It is noticeable that in this species the punctures of both the head and the elytra are quite conspicuously larger than those of the pronotum. The general resemblance to *H. vagans* is considerable, but even apart from the dorsal sculpture the much longer 3rd antennal joint of *vagans* furnishes a satisfactory distinction. The trilobed outline is well developed and divided, the middle lobe very narrow (scarcely a third of a lateral lobe in size).

Central Australia; Farina, etc.

H. Hackeri, sp. nov. Elongatus, postice modice dilatatus; minus nitidus; ferrugineus; supra pilis brevibus suberectis et nonnullis erectis magis elongatis vestitus (his præsertim in pronoto); clypeo crebre ruguloso, antice late leviter emarginato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte

mediana quam laterales multo angustiori); fronte rugulose sat grosse punctulata, hac clypeoque ut plana minus disparia visis; antennis 9-articulatis, articulo 3^o quam 4^{us} sat multo longiori; prothorace quam longiori ut 9 ad 5 latiori, antice sat angustato, supra fortius minus crebre punctulato (puncturis circiter 20 in segmenti longitudine), lateribus (superne visis) sat arcuatis (a latere visis) sat fortiter sinuatis, sulco laterali antice sat dilatato, angulis anticis acutis sat productis posticis (superne visis) rotundatim obtusis, basi sat fortiter bisinuata, margine basali sat æquali; elytris squamose subtiliter sat crebre punctulatis (trans elytron puncturis circiter 35); pygidio subtiliter vix crebre punctulato; coxis posticis quam metasternum haud brevioribus quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali quam 2^{us} sat breviori, quam 3^{us} sublongiori; unguiculis posticis appendiculatis, parte basali quam apicalis sat longiori ad apicem breviter spiniformi. Long., 5 $\frac{3}{4}$ l.; lat., 2 $\frac{1}{2}$ l.

This species is near *H. badius*, Macl., but is much larger, and the punctures of its pronotum and elytra are notably larger. The trilobed outline of the head is very distinctly but not very strongly divided, the middle lobe a little less than a lateral lobe in size.

North Queensland; Coen (Hacker). Given to me by Mr. Carter.

H. mæstus, sp. nov. Sat elongatus, postice sat dilatatus; minus nitidus; piceo-brunneus, antennis ferrugineis; supra pilis brevibus adpressis sat crebris et pilis nonnullis erectis elongatis vestitus; clypeo (hoc antice sat emarginato) fronteque sat crebre sat rugulose nec grosse punctulatis, ut plana modice disparia visis; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam lateralium dimidium manifeste latiori); antennis 9-articulatis robustis, articulo 3^o quam 2^{us} parum longiori; prothorace quam longiori ut 13 ad 8 latiori, antice fortiter angustato, supra confertim subtiliter subsapere punctulato (puncturis circiter 40 in segmenti longitudine), lateribus (superne visis) modice arcuatis, angulis anticis acutis modice productis posticis (superne visis) obtusis, basi sat fortiter bisinuata, margine basali ad latera paullo magis elevato; elytris vix manifeste striatis, subtilius sat crebre punctulatis (trans elytron puncturis circiter 40); pygidio subtiliter crebrius punctulato; coxis posticis quam metasternum vix brevioribus quam segmentum ventrale 2^{um} multo longioribus;

tarsorum posticorum articulo basali quam 2^{us} parum breviori quam 3^{us} sat longiori; unguiculis posticis robustis appendiculatis, parte basali quam apicalis parum longiori. Long., $6\frac{1}{2}$ l.; lat., 3 l.

Easily recognizable by the characters cited in the tabulation. The trilobed outline of the head well defined but scarcely divided, the middle lobe about three-fifths of a lateral lobe in size.

New South Wales; Sydney (Mr. Lea).

H. amœnus, sp. nov. Sat elongatus, postice parum dilatatus; sat nitidus; læte ferrugineus; supra pilis sat brevibus suberectis, et in pronoto antice capiteque nonnullis elongatis erectis, vestitus; clypeo crebre sat grosse ruguloso, antice late leviter emarginato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales multo angustiori); fronte minus crebre sat grosse vix rugulose punctulato; hac clypecque ut plana sat disparia visis; antennis 9-articulatis, articulo 3^o parvo; prothorace quam longiori ut 11 ad 6 latiori, antice perparum angustato; supra fortiter minus crebre punctulato (puncturis circiter 18 in segmenti longitudine), lateribus (superne visis) leviter arcuatis, sulco laterali antice sat fortiter dilatato, angulis anticis acutis sat fortiter productis posticis (superne visis) sat rectis, basi bisinuata, margine basali ad latera multo magis elevato; elytris fortiter minus crebre punctulatis (trans elytron puncturis circiter 24); pygidio fortiter minus crebre punctulato; coxis posticis quam metasternum haud brevioribus, quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali quam 2^{us} sat breviori; unguiculis posticis elongatis appendiculatis. Long., 6 l.; lat., $2\frac{4}{5}$ l.

A fine large species, of a bright-reddish ferruginous colour; readily distinguishable by the characters indicated in the tabulation. The trilobed outline of the head is fairly well developed but not divided, the middle lobe about two-fifths of a lateral lobe in size.

Western Australia; Mount Barker (Mr. Lea).

H. ambiguus, sp. nov. Minus elongatus, postice minus dilatatus; sat nitidus; fuscus, palpis antennisque ferrugineis; supra pilis brevibus suberectis nonnullisque sat elongatis erectis vestitus; clypeo (hoc antice late vix emarginato) fronteque (hac antice subito declivi) crebre sat grosse rugulosis, ut plana valde disparia visis; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales

paullo angustiori); antennis 9-articulatis, articulo 3^o quam 4^{us} sat longiori; prothorace quam longiori ut 11 ad 6 latiori, antice modice angustato, supra fortiter minus crebre punctulato (puncturis circiter 14 in segmenti longitudine), lateribus (superne visis) rotundatis, sulco laterali antice sat dilatato, angulis anticis acutis sat productis posticis (superne visis) rotundatis, basi vix perspicue bisinuata, margine basali æquali; elytris granulatis, sparsius sat fortiter punctulatis (trans elytron puncturis circiter 20); pygidic sat fortiter minus crebre punctulato; coxis posticis quam metasternum parum brevioribus quam segmentum ventrale 2^{um} multo longioribus; tarsorum posteriorum articulo basali quam 2^{us} paullo breviori quam 3^{us} paullo longiori; unguiculis posticis sat elongatis, parte basali quam apicalis paullo longiori. Long., 4 l.; lat., 2 l.

Very distinct from all other species known to me except *H. siccus*, Blackb., which it resembles rather closely. Joint 3 of its antennæ much more elongate readily distinguishes it, however, from *siccus*, as also its puncturation notably coarser, prothorax with sides and hind angles more rounded, longer basal joint of hind tarsi, etc. The hind coxæ leave more than usual of the 1st ventral segment exposed, but are very little shorter than the metasternum. The trilobed outline of the head is feebly developed and not divided, the middle lobe about three-quarters of a lateral lobe in size. The pronotum is fringed with erect hairs in front.

Western Australia; Coolgardie.

H. planiceps, sp. nov. Elongatus, postice sat dilatatus; sat nitidus; ferrugineus, supra pilis brevibus adpressis et nonnullis in pronoto antice longioribus erectis vestitus; clypeo (hoc antice subtruncato) fronteque confertim nec grosse rugulosus, planum continuum efficientibus; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana lateralibus sat æquali); antennis 9-articulatis, articulo 3^o quam 4^{us} multo longiori; prothorace quam longiori ut 9 ad 5 latiori, antice parum angustato, supra subtiliter crebrius punctulato (puncturis circiter 25 in segmenti longitudine), lateribus (superne visis) sat arcuatis, sulco laterali antice leviter dilatato, angulis anticis acutis minus productis posticis (superne visis) rotundato-obtusis, basi vix perspicue sinuata, margine basali sat æquali; elytris subtilius sat crebre punctulatis (trans elytron puncturis circiter 30); pygidio subtilius sat crebre punctulato; coxis posticis quam metasternum vix brevioribus, quam

segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali quam 2^{us} multo, quam 3^{us} vix, breviori; unguiculis posticis appendiculatis, sat elongatis, parte basali quam apicalis haud multo longiori. Long., 5 l.; lat., 2 $\frac{1}{4}$ l.

A remarkably narrow elongate species, the prothorax unusually small in comparison with the elytra. Not much like any other species known to me, though structurally near *collaris*, Blackb., which, however, is very much smaller and less elongate, with an unusually large prothorax, joint 3 of antennæ very short, basal joint of the hind tarsi as long as the 2nd joint, etc. The prothorax of *planiceps*, measured at the middle of the front margin, is very little narrower than at the base, the sides converging somewhat in front of the extremities of this line. The trilobed outline of the head is fairly well developed, but scarcely divided, the middle lobe about equal in size to a lateral lobe.

Western Australia; Geraldton (Mr. Lea).

H. approximans, sp. nov. Sat elongatus, postice leviter dilatatus; minus nitidus; ferrugineus; supra pilis adpressis sat brevibus et nonnullis elongatis erectis (his præsertim in pronoto antice et in capite sitis) vestitus; clypeo crebre ruguloso antice late vix emarginato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat angustiori); fronte fortiter sat crebre haud rugulose punctulata, hac clypeoque ut plana parum disparia visis; antennis 9-articulatis, articulo 3^o quam 2^{us} multo breviori quam 4^{us} parum longiori; prothorace quam longiori ut 7 ad 4 latiori, antice sat angustato, supra subtilius sat crebre punctulato (puncturis circiter 25 in segmenti longitudine), lateribus (superne visis) sat arcuatis, sulco laterali antice haud dilatato nec margine laterali antice magis elevato, angulis anticis minus acutis minus productis posticis (superne visis) rotundato-obtusis, basi vix bisinuata, margine basali sat æquali; elytris crebre sat subtiliter subaspere punctulatis (trans elytron puncturis circiter 30); pygidio sparsius leviter punctulato; coxis posticis quam metasternum vix brevioribus, quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali 2^o sat æquali, quam 3^{us} sat longiori; unguiculis posticis appendiculatis, parte basali quam apicalis sat longiori. Long., 3 $\frac{1}{2}$ l.; lat., 1 $\frac{1}{2}$ l.

This species is not at all close to any other known to me except the following species (*H. ordinarius*), from which, however, it is quite easily distinguishable by, *inter alia*, the

much shorter 3rd joint of its antennæ, its prothorax a little more transverse and having sides more rounded and lateral margins very different and hind angles rounded off, and its elytral puncturation distinctly asperate. The trilobed outline of the head is feebly developed and scarcely divided, the middle lobe about two-thirds of a lateral lobe in size.

New South Wales; Sydney (Mr. Lea).

H. ordinarius, sp. nov. Modice elongatus, postice sat dilatatus; sat nitidus; ferrugineus; supra pilis adpressis sat brevibus et nonnullis elongatis erectis (his præsertim in pronoto antice et in capite sitis) vestitus; clypeo crebre ruguloso, antice late leviter emarginato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales paullo angustiori); fronte sat fortiter sat crebre vix rugulose punctulata, hac clypeoque ut plana parum disparia visis; antennis 9-articulatis, articulo 3^o quam 2^{us} parum breviori quam 4^{us} sat multo longiori; prothorace quam longiori ut 12 ad 7 latiori, antice sat angustato, supra subtilius sat crebre punctulato (puncturis circiter 25 in segmenti longitudine), lateribus (superne visis) minus arcuatis, sulco laterali antice sat dilatato, margine laterali antice sat multo magis elevato, angulis anticis sat acutis sat productis posticis (superne visis) sat rectis, basi leviter bisinuata, margine basali sat æquali; elytris crebre sat subtiliter punctulatis (trans elytron puncturis circiter 30); pygidio crebrius subtilius punctulato; coxis posticis quam metasternum parum brevioribus, quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali 2^o sat æquali, quam 3^{us} sat longiori; unguiculis posticis appendiculatis, parte basali quam apicalis paullo longiori. Long., 3 $\frac{3}{8}$ l.; lat., 1 $\frac{4}{5}$ l.

For remarks on this species, see the preceding (*H. approximans*). The trilobed outline of the head is like that of *H. approximans*. I have before me a mutilated example of a species from Victoria which seems to be closely allied to this, but unfortunately it has lost its hind claws, and so cannot justifiably be described.

New South Wales; Thornleigh (Mr. Froggat).

H. minutus, sp. nov. Minus elongatus, postice vix dilatatus; minus nitidus; rufo-fuscus, antennis palpis pedibus corporeque subtus dilutioribus; supra nonnihil pruinosis, pilis perbrevibus sparsis adpressis et nonnullis elongatis erectis (his præsertim in pronoto antice et in capite sitis) vestitus; clypeo crebre subtilius ruguloso, antice subtruncato; labro clypei planum superanti; capite antice

(a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sublatori); fronte subtilius minus crebre nec rugulose punctulata, hac clypeoque ut plana sat disparia visis; antennis 9-articulatis, articulis 3-6 perbrevisibus sat æqualibus; prothorace quam longiori ut 12 ad 7 latiori, antice sat angustato, supra subtilius leviter nec crebre punctulato (puncturis circiter 15 in segmenti longitudine) lateribus (superne visis) fortiter rotundatis, angulis anticis vix acutis modice productis posticis (superne visis) rotundatis, basi vix perspicue sinuata, margine basali subtili sat æquali; elytris perspicue striatis, sparsim leviter nec æqualiter punctulatis; pygidio longitudinaliter carinato, leviter sparsim punctulato; coxis posticis quam metasternum vix brevioribus, quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali quam 2^{us} nonnihil, quam 3^{us} sat multo, longiori; unguiculis posticis appendiculatis, parte basali quam apicalis sat longiori. Long., $1\frac{1}{5}$ l.; lat., $\frac{2}{5}$ l.

Easily recognizable on account of its extremely small size. If size were disregarded and also the pruinosity of the elytra (involving, perhaps, a little iridescence), the species would have to be placed in the tabulation beside *H. siccus*, from which it differs by, *inter alia multa*, its elytra very distinctly striate. The puncturation of the elytra is sparse and not symmetrically distributed, so that the counting of punctures is of little use, but the number may be roughly stated as averaging about 15 across an elytron. The trilobed outline of the head is not strongly developed and is not divided, the middle lobe slightly larger than a lateral lobe.

South Australia; Sedan (taken by the late Mr. Rothe).

H. miser, sp. nov. Modice elongatus, postice leviter dilatatus; minus nitidus; ferrugineus; supra pilis brevibus adpressis vestitus; clypeo crebre sat fortiter ruguloso, antice truncato, oculos in exteriorem partem haud superanti; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales parum angustiori); fronte sat fortiter minus crebre nec rugulose punctulata; hac clypeoque fere planum continuum efficientibus; antennis 9-articulatis, articulo 3^o quam 4^{us} parum longiori; prothorace quam longiori ut 3 ad 2 latiori, antice parum angustato, supra leviter canaliculato, subtilius vix crebre punctulato (puncturis circiter 20 in segmenti longitudine), lateribus (superne visis) parum arcuatis, angulis anticis sat acutis sat productis posticis (superne visis) sat acute rectis, basi sat fortiter bisinuata, margine basali ad latera vix

magis elevato; elytris subtilius squamose sat crebre punctulatis (trans elytron puncturis circiter 30); pygidio sparsius minus subtiliter punctulato; coxis posticis quam metasternum sat multo brevioribus, quam segmentum ventrale 2^{um} sat longioribus; tarsorum posticorum articulo basali quam 2^{us} vix breviori, quam 3^{us} sublongiori; unguiculis posticis appendiculatis, partis basalis compressæ marginibus inter se parallolis. Long., 4 l.; lat., 2 l. (vix).

Besides the character noted in the tabulation as distinguishing this species from *H. montanus*, its clypeus is not emarginate in front (in *montanus* feebly so), its elytral punctures are smaller and more numerous and of the squamose form (in *montanus* about 25 across an elytron, and not squamose), and the basal piece of its claws is less widely compressed. The trilobed outline of the head is feebly developed and not divided, the middle lobe scarcely smaller than a lateral lobe. In *montanus* the trilobed outline is notably better developed and is distinctly divided. A *Heteronyx* from Queensland, in my collection, which has lost its hind claws and, therefore, cannot be confidently placed, is probably somewhat close to this species.

New South Wales; Sydney.

H. nudus, sp. nov. Modice elongatus, postice leviter dilatatus; sat nitidus; ferrugineus; supra pilis brevibus sparsissimis erectis vestitus; clypeo (hoc antice late emarginato) fronteque crebre subtilius rugulosis, ut plana valde disparia visis; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales multo angustiori); antennis 9-articulatis, articulo 3^o quam 4^{us} paullo longiori; prothorace quam longiori ut 9 ad 5 latiori, antice sat angustato, supra sat crebre sat subtiliter punctulato (puncturis circiter 24 in segmenti longitudine), lateribus (superne visis) leviter arcuatis, sulco laterali antice sat dilatato, angulis anticis sat acutis sat productis posticis (superne visis) acute rectis, basi sat fortiter bisinuata, margine basali ad latera summa magis elevato; elytris fortiter sparsius punctulatis (trans elytron puncturis circiter 23); pygidio crebre fortius punctulato; coxis posticis quam metasternum sat multo brevioribus, quam segmentum ventrale 2^{um} sat longioribus; tarsorum posticorum articulo basali quam 2^{us} sat breviori, quam 3^{us} vix longiori; unguiculis posticis appendiculatis, parte basali quam apicalis sat longiori. Long., 4½ l.; lat., 2¼ l.

Remarkable by the punctures of its pronotum very conspicuously finer and closer than those of its elytra. In this respect it resembles *H. Rothei*, Blackb., which is a considerably smaller species, with the hind angles of the prothorax though well defined notably less sharp than in *H. nudus*, the hind femora very differently sculptured, etc. The trilobed outline of the head is strongly defined and divided, the middle lobe about half of a lateral lobe in size.

Western Australia; Bridgetown (Mr. Lea).

H. impar, sp. nov. Modice elongatus, postice minus dilatatus; sat nitidus; niger, antennis (harum flabello testaceo), palpis pedibus corporeque subtu dilutioribus; supra fere glaber; clypeo sat crebre ruguloso, antice late vix emarginato; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales paullo angustiori); fronte sat fortiter minus crebre nec rugulose punctulata; hac clypeoque ut plana valde disparia visis; antennis 9-articulatis, articulo 3^o quam 4^{us} paullo longiori; prothorace quam longiori ut 8 ad 5 latiori, antice sat fortiter angustato, supra sparsim subtiliter punctulato (puncturis circiter 12 in segmenti longitudine), lateribus (superne visis) pone medium sat fortiter rotundato-dilatatis, sulco laterali æquali, angulis anticis sat acutis modice productis posticis (superne visis) rotundatis, basi vix sinuata, margine basali subtili sat æquali; elytris fortius minus crebre punctulatis (trans elytron puncturis circiter 23); pygidio longitudinaliter carinato, fortius sparsius punctulato; coxis posticis quam metasternum sat multo brevioribus, quam segmentum ventrale 2^{um} paullo longioribus; tarsorum posticorum articulo basali quam 2^{us} sat breviori, 3^o sat æquali; unguiculis posticis appendiculatis, parte basali quam apicalis multo longiori. Long., 3 l.; lat., 1½ l.

The punctures of the pronotum very much finer and less close than of the elytra will distinguish this species from all others (known to me) resembling it structurally. Its small size and dark colour (if the colour is constant) are also very distinctive. The trilobed outline of the head is feebly defined, not divided, the middle lobe fully three-quarters of a lateral lobe in size.

North Queensland (Mr. Perkins).

H. hirsutus, sp. nov. Minus elongatus, postice leviter dilatatus; sat nitidus; ferrugineus; supra (præsertim in elytris et pronoti margine antico) pilis sat elongatis erectis vestitus; clypeo (hoc antice late emarginato).

fronteque (hac antice alte perpendiculari) sat crebre rugulosis; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterali dimidium haud angustiori); antennis 9-articulatis, articulo 3^o quam 4^{us} sat longiori; prothorace quam longiori fere duplo latiori, antice minus angustato, supra subtilius minus crebre punctulato (puncturis circiter 18 in segmenti longitudine), lateribus (superne visis) perparum arcuatis, sulco laterali antice sat dilatato, angulis anticis acutis sat productis posticis (superne visis) sat acute rectis, basi leviter bisinuata, margine basali ad latera summa magis elevato; elytris sat fortiter minus crebre punctulatis (trans elytron puncturis circiter 26); pygidio fortius minus crebre punctulato; coxis posticis quam metasternum sat multo brevioribus, quam segmentum ventrale 2^{um} haud multo longioribus; tarsorum posticorum articulo basali quam 2^{us} multo, quam 3^{us} parum, breviori; unguiculis posticis appendiculatis, parte basali quam apicalis sat longiori. Long., $4\frac{1}{5}$ l.; lat., $2\frac{1}{5}$ l.

Very easily distinguishable from its allies by the characters cited in the tabulation. The trilobed outline of the head is very well developed, and is divided, the middle lobe being about half of a lateral lobe in size. The punctures of the pronotum are considerably smaller than those of the elytra, but not conspicuously more closely or less closely placed.

Western Australia (exact habitat not known).

H. convexicollis, sp. nov. Modice elongatus, postice parum dilatatus; sat nitidus; obscure ferrugineus, palpis antennisque dilutioribus; supra fere glaber; clypeo crebre vix grosse ruguloso, antice late leviter emarginato; labro clypei planum vix superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat angustiori); fronte sat crebre sat grosse parum rugulose punctulata; hac clypeoque ut plana sat disparia visis; antennis 9-articulatis, articulo 3^o quam 4^{us} vix longiori; prothorace quam longiori ut 7 ad 4 latiori, antice sat angustato, supra præter solitum convexo, subtilius sat sparsim punctulato (puncturis circiter 18 in segmenti longitudine), lateribus (superne visis) sat arcuatis, sulco laterali sat æquali, angulis anticis sat rectis parum prominulis posticis (superne visis) rotundato-obtusis, basi vix sinuata, margine basali æquali; elytris fortius minus crebre punctulatis (trans elytron puncturis circiter 22); pygidio longitudinaliter carinato, sparsim

subtilius punctulato; coxis posticis quam metasternum multo brevioribus, quam segmentum ventrale 2^{um} paullo longioribus; tarsorum posticorum articulo basali quam 2^{us} sat breviori 3^o sat æquali; unguiculis posticis appendiculatis, parte basali quam apicalis multo longiori. Long., 3 $\frac{2}{5}$ l.; lat., 1 $\frac{3}{5}$ l.

Easily distinguishable among its nearer allies by its strongly convex, almost subgibbous, pronotum (very much more convex than that of *H. jubatus*). The trilobed outline of the head is feebly developed and not divided, the middle lobe about two-thirds of a lateral lobe in size.

North Queensland (Mr. Perkins).

H. calidus, sp. nov. Modice elongatus, postice parum dilatatus; sat nitidus; ferrugineus; supra pilis minus brevibus adpressis minus sparsim vestitus; clypeo crebre subtilius ruguloso, antice leviter emarginato; labro clypei planum vix superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat angustiori); fronte rugulose sat fortiter sat crebre punctulata; hac clypeoque ut plana sat disparia visis; antennis 9-articulatis, articulo 3^o quam 4^{us} paullo longiori; prothorace quam longiori ut 7 ad 4 latiori, antice sat fortiter angustato, supra subtilius sat crebre punctulato (puncturis circiter 20 in segmenti longitudine), lateribus (superne visis) sat arcuatis pone medium dilatato-rotundatis, sulco laterali æquali, angulis anticis vix acutis parum prominulis posticis (superne visis) sat rotundatis, basi leviter bisinuata, margine basali æquali; elytris minus subtiliter sat profunde sat crebre punctulatis (trans elytron puncturis circiter 24); pygidio longitudinaliter carinato, sat fortiter punctulato; coxis posticis quam metasternum multo brevioribus, quam segmentum ventrale 2^{um} paullo longioribus; tarsorum posticorum articulo basali quam 2^{us} sat breviori, 3^o sat æquali; unguiculis posticis appendiculatis, parte basali quam apicalis multo longiori. Long., 3-3 $\frac{1}{2}$ l.; lat., 1 $\frac{1}{2}$ -1 $\frac{3}{4}$ l.

This species is very close to *H. parvulus*, Macl. The punctures of its elytra are very distinctly and more strongly impressed, and its prothorax is less strongly rotundate-dilatate laterally behind the middle. It is, however, best distinguished by its longitudinally carinate pygidium. In both species there are differences in the pygidium which I believe to be sexual. In *parvulus* one sex (I believe it to be the male) has the pygidium very faintly and sparsely punctured, with an almost obsolete tubercle in the middle of its surface; while

in the other sex the pygidium is a little more strongly and closely punctured, with a faint impression on either side near the apex. In *calidus* the sex that I regard as male has the pygidium carinate, with sparse fairly strong puncturation; while in the other sex the pygidium is carinate, with still stronger and conspicuously closer punctures. It should also be noted that in *calidus* the elytra are transversely thickened, quite strongly, close to the apex, while in *parvulus* there is scarcely any trace of such structure. The trilobed outline of the head is feeble in both species, and not divided, the middle lobe about two-thirds of a lateral lobe in size. I have a specimen from Roebuck Bay too much mutilated to be justifiably described which seems to represent a distinct species very close to *calidus*.

North Queensland (Mr. Perkins).

H. inconspicuus, sp. nov. Sat elongatus, postice parum dilatatus; sat nitidus; ferrugineus; supra pilis adpressis minus brevibus vestitus; clypeo crebre ruguloso, antice late parum emarginato; labro clypei planum vix superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat angustiori); fronte sat grosse parum rugulose punctulata; hac clypeoque ut plana minus disparia visis; antennis 9-articulatis, articulo 3^o quam 4^{us} parum longiori; prothorace quam longiori ut 7 ad 4 latiori, antice sat angustato, latitudine majori prope basin sita, supra subtilius sat crebre punctulato (puncturis circiter 20 in segmenti longitudine), lateribus (superne visis) leviter arcuatis, sulco laterali sat æquali, angulis anticis sat rectis parum productis posticis (superne visis) rotundato-obtusis, basi leviter bisinuata, margine basali subtili æquali; elytris subtilius sat crebre punctulatis (trans elytron puncturis circiter 26); pygidio longitudinaliter carinato, sat crebre sat fortiter punctulato; coxis posticis quam metasternum multo brevioribus, quam segmentum ventrale 2^{um} paullo longioribus; tarsorum posticorum articulo basali quam 2^{us} sat breviori, 3^o sat æquali; unguiculis posticis appendiculatis, parte basali quam apicalis multo longiori. Long., 3-3 $\frac{2}{5}$ l.; lat., 1 $\frac{2}{5}$ -1 $\frac{3}{5}$ l.

Easily distinguishable by the characters cited in the tabulation. The trilobed outline of the head is feebly developed and not divided, the middle lobe about two-thirds of a lateral lobe in size. The fine raised lateral edging of the elytra does not continue along the apex, but ends abruptly at the extero-apical corner.

New South Wales; Sydney, etc.

H. subcylindricus, sp. nov. Modice elongatus, postice vix dilatatus; modice nitidus; ferrugineus; supra pilis adpressis minus brevibus crebrius vestitus; clypeo (hoc antice sat emarginato) fronteque sat crebre rugulosis, ut plana sat disparia visis; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat angustiori); antennis 9-articulatis, articulo 3^o quam 4^{us} vix longiori; prothorace quam longiori ut 12 ad 7 latiori, latitudine majori vix pone medium sita, antice sat angustato, supra subtilius sat crebre punctulato (puncturis circiter 20 in segmenti longitudine), lateribus (superne visis) sat rotundatis, sulco laterali æquali, angulis anticis sat rectis vix productis posticis rotundatis, basi vix sinuata, margine basali subtili æquali; elytris crebre subtilius nonnihil aspere punctulatis (trans elytron puncturis circiter 30); pygidio longitudinaliter carinato leviter sparsius punctulato; coxis posticis quam metasternum sat multo brevioribus, quam segmentum ventrale 2^{us} paullo longioribus; tarsorum posteriorum articulo basali quam 2^{us} paullo breviori, quam 3^{us} sublongiori; unguiculis posticis appendiculatis, parte basali quam apicalis multo longiori. Long., 3-3½ l.; lat., 1½-1⅔ l.

The fine raised edging of the elytra is as in *H. inconspicuus*, Blackb., from which the present species differs by numerous characters, especially the shape of the prothorax. If the prothorax be looked at from a point above, and a little in front of, the lateral margin (so that the whole lateral outline is visible) it will be seen that the point whence the curve begins to converge towards the apical angle and towards the extremity of the base is scarcely nearer to the base than to the apex, while in *inconspicuus* it is considerably nearer to the base. The trilobed outline of the head is very feeble and scarcely divided, the middle lobe fully two-thirds of a lateral lobe in size. This species is very like *H. concolor*, Macl., from which it differs by its form longer and more cylindric, the puncturation of its elytra closer and subasperate, its claws normally appendiculate, etc.

North Queensland; Kuranda (Mr. Dodd).

H. puer, sp. nov. Minus elongatus, postice vix dilatatus; minus nitidus; obscure ferrugineus, palpis antennisque dilutioribus; supra pilis adpressis minus brevibus vestitus; clypeo (hoc antice emarginato) crebre ruguloso; labro clypei planum vix superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam

laterales sat multo angustiori); fronte fortiter sat rugulose punctulata; hac clypeoque ut plana minus disparia visis; antennis 9-articulatis, articulo 3^o quam 4^{us} paullo longiori; prothorace quam longiori ut 3 ad 2 (vix) latiori, latitudine majori vix pone medium sita, antice sat fortiter angustato, supra subtilius sat crebre punctulato (puncturis circiter 20 in segmenti longitudine), lateribus (superne visis) sat fortiter rotundatis, sulco laterali æquali, angulis anticis sat rectis parum productis posticis (superne visis) sat rotundatis, basi vix bisinuata, margine basali subtili æquali; elytris crebre subtiliter nec aspere punctulatis (trans elytron puncturis circiter 32); pygidio sparsius minus subtiliter punctulato; coxis posticis quam metasternum sat multo brevioribus, quam segmentum ventrale 2^{um} paullo longioribus; tarsorum posteriorum articulo basali quam 2^{us} vix breviori, quam 3^{us} sat longiori; unguiculis posticis appendiculatis subbifidis, parte basali quam apicalis multo longiori. Long., 3 l.; lat., 1½ l.

This species is somewhat close to several others, notes on which will be found under the heading of the next species (*H. mildurensis*); it can be identified with confidence I think by the characters indicated in the tabulation. Its subbifid claws and other characters cause it to resemble *H. subfuscus*, Macl. (Group VII.), from which it is easily distinguished, however, by its intermediate claws normally appendiculate, its notably smaller size, the smaller size of its elytral punctures (which have no tendency to be asperate), etc. The trilobed outline of its head is fairly well defined but not quite divided, the middle lobe a little more than half of a lateral lobe in size.

North Queensland (Mr. Perkins).

H. mildurensis, sp nov: Minus elongatus, postice parum dilatatus; sat nitidus; obscure ferrugineus, antennarum flabello testaceo, elytris piceo-umbratis; supra pilis adpressis minus brevibus vestitus; clypeo crebre subtilius ruguloso, antice leviter emarginato; labro clypei planum leviter superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales sat angustiori) fronte sat fortiter minus rugulose punctulata; hac clypeoque ut plana minus disparia visis; antennis 9-articulatis, articulo 3^o quam 4^{us} manifeste longiori; prothorace quam longiori ut 3 ad 2 latiori, latitudine majori vix pone medium sita, antice sat angustato, supra subtilius sat crebre punctulato (puncturis circiter 20 in segmenti longitudine), lateribus (superne visis) sat rotund-

atis, sulco laterali æquali, angulis anticis sat rectis parum productis posticis (superne visis) sat rotundatis, basi vix bisinuata, margine basali æquali; elytris sat subtiliter vix crebre punctulatis (trans elytron puncturis circiter 24); pygidio leviter minus crebre punctulato, longitudinaliter carinato; coxis posticis quam metasternum sat multo brevioribus, quam segmentum ventrale 2^{um} paullo longioribus; tarsorum posticorum articulo basali quam 2^{us} paullo breviori, 3^o sat æquali; unguiculis posticis appendiculatis, parte basali quam apicalis multo longiori, variat corpore toto ferrugineo. Long., 3 l.; lat., 1 $\frac{3}{4}$ l.

The trilobed outline of the head is very feeble and not divided, the middle lobe about two-thirds of a lateral lobe in size. The species of the aggregate AA, BB, CC, DD, EEE, FF, GG, are all obscure and small insects bearing much general resemblance to each other. I believe the characters indicated in the tabulation as distinguishing them, *inter se*, to be reliable and constant, but think it desirable to add some notes on some of their other distinctive characters. *H. concolor* and *suturalis* have a fringe of stout bristles at the apex of the elytra which is absent in the other species. I have seen a sufficiently long series of *H. calidus* and *inconspicuus* to satisfy me that the fringe is constantly absent in them, but it is possibly wanting through abrasion in some of the others. The elytral puncturation is very notably closer in *H. subcylindricus* and *puer* than in any other of the aggregate. *H. inconspicuus* differs from all the others of the aggregate in its prothorax being at its widest notably nearer to the base, with sides feebly arched and hind angles less rounded off. The pygidium is more or less strongly carinate in all except *H. oscillator*, *parvulus*, *suturalis*, and *puer*. *H. concolor* and *puer* alone have hind claws subbifid.

Victoria; Mildura.

SUPPLEMENT.

The following species must be added to Groups already treated in the present Revision. Most of them have been received since the publication of the Memoirs in which they must stand. On the pages following the descriptions some general remarks will be found, and also some notes on the described species that I have not been able to tabulate:—

GROUP II.

H. confertus, sp. nov. Sat elongatus, postice sat dilatatus; minus nitidus; piceo-ferrugineus, antennis palpis pedibusque dilutioribus; supra pilis adpressis sat brevibus

vestitus; pronoto pilis erectis elongatis antice fimbriato, et his in elytris prope basin distributis; clypeo (hoc antice rotundato) fronteque crebre sat fortiter rugulosis, planum sat æqualem efficientibus; antennis 8-articulatis; prothorace quam longiori ut 11 ad 7 latiori, antice fortiter angustato, supra confertim subtiliter subaspere punctulato (puncturis circiter 38 in segmenti longitudine), lateribus pone mediam partem sat fortiter rotundatis, angulis anticis sat acutis parum prominulis posticis (supernè visis) subacutis, basi modice bisinuata, margine basali ad latera vix magis elevato; elytris confertim sat subtiliter subaspere punctulatis (trans elytron puncturis circiter 50); pygidio crebrius subtilius punctulato; coxis posticis quam metasternum sat brevioribus, quam segmentum ventrale 2^{um} sat longioribus; tibiis anticis extus tridentatis; tarsorum posticorum articulo basali quam 2^{us} paullo breviori quam 3^{us} parum longiori; unguiculis appendiculatis. Long., $6\frac{1}{2}$ l.; lat., $3\frac{1}{2}$ l.

In the tabulation of Group II. (Trans. Roy. Soc., S.A., 1908, p. 384) this species must stand beside *torvus*, Blackb., which it resembles considerably, differing, however, by, *inter alia multa*, the much sharper hind angles of its pronotum and the much closer and finer punctures of its elytra. It may be placed thus in the tabulation (under A, BB, C, D):—

- E. Elytral punctures very close (20 from suture not reaching to middle) ... confertus, *Blackb.*
 EE. Elytral punctures much less close (20 from suture considerably passing middle) torvus, *Blackb.*

It should be noted that the clypeus and frons do not present quite so even and continuous a surface as in *H. tristis*, Blackb., and *torvus*—which is also the case in *H. hispidulus*, Blackb. The pronotum in *H. tristis* is much less closely punctured than in this species and *torvus*.

Victoria; Dividing Range.

H. novitius, sp. nov. Minus elongatus, postice leviter dilatatus; sat nitidus; obscure ferrugineus: supra pilis brevibus adpressis vestitus; pronoto pilis erectis sat elongatis antice fimbriato, nonnullis in elytris dispersis; clypeo (hoc antice late vix emarginato) fronteque crebre sat rugulosis, planum continuum efficientibus; labro clypei planum fere attingenti, a tergo oblique viso sat fortiter emarginato; antennis 8-articulatis; prothorace quam longiori ut 5 ad 3 latiori, antice parum angustato, supra subtilius sat crebre punctulato (puncturis circiter 22 in segmenti longitudine), lateribus (superne visis) minus

arcuatis, angulis anticis modice acutis sat productis posticis (superne visis) rectis, basi sat fortiter bisinuata, margine basali sat æquali; elytris sat crebre granulatis, squamose subtilius crebre punctulatis (trans elytron puncturis circiter 30); pygidio subtilius sparsius punctulato; coxis posticis quam metasternum sat brevioribus quam segmentum ventrale 2^{nm} sat longioribus; tibiis anticis extus fortiter tridentatis; tarsorum posticorum articulo basali quam 2^{us} manifeste breviori quam 3^{us} paullo longiori; unguiculis appendiculatis. Long., $4\frac{1}{2}$ l.; lat., $2\frac{2}{3}$ l.

Easily distinguishable from all the previously described members of this Group by its labrum, which is considerably projected and is erect in front, but not quite reaching the level of the clypeus, the labrum visible when the head is viewed obliquely from behind, but with a concave outline. It could be placed in the tabulation (Trans. Roy. Soc., S.A., 1908, p. 384) as DDD in the aggregate A, BB, C, thus:—

DDD. Pronotum smoothly and closely,
but by no means confluently, punctured novitius, *Blackb.*

The structure of its labrum could not be used to characterize it in the tabulation without the tabulation being entirely relettered. The membranous apex of the elytra (in the unique type) is strongly developed. In my former Revision this species would have stood in Group III. (now dropped).

New South Wales; Sydney (Mr. Lea).

H. coxalis, sp. nov. Sat brevis, postice sat dilatatus; nitidus; ferrugineus; supra glaber; clypeo crebre sat fortiter ruguloso, antice late subtruncato; labro clypei planum nullo modo attingenti; fronte fortiter minus crebre vix rugulose punctulata; hac clypeoque ut plana valde disparia visis; antennis 8-articulatis; prothorace quam longiori ut 7 ad 3 latiori, antice parum angustato, supra sat fortiter minus crebre punctulato (puncturis circiter 12 in segmenti longitudine), lateribus (superne visis) modice arcuatis, angulis anticis sat acutis modice productis posticis (superne visis) acute rectis nonnihil deplanatis, basi leviter bisinuata, margine basali parum manifesto; elytris fere ut pronotum punctulatis (trans elytron puncturis circiter 20); pygidio crebre minus fortiter punctulato; coxis posticis brevissimis, quam segmentum ventrale 2^{nm} sat multo brevioribus; tibiis anticis extus bidentatis; tarsorum posticorum articulo basali

quam 2^{us} manifeste longiori, quam 3^{us} sat multo breviori; unguiculis appendiculatis. Long., 3 l.; lat., 1 $\frac{3}{5}$ l.

I omitted this species when I was revising Group II. because I was disposed to consider it generically distinct from *Heteronyx*, but on further consideration its peculiar characters appear to me to be only exaggerations of what is to be found in species that certainly must not be separated from *Heteronyx*. Its prothorax is more strongly transverse and its hind coxæ shorter than those of any other *Heteronyx* known to me, and it is remarkable that these two characters should be present in one species. I think there is only one other *Heteronyx* (*H. setifer*, Blackb.) in which the basal joint of the hind tarsi is conspicuously longer than the 2nd joint. The puncturation of both pronotum and elytra is somewhat acervate. In the tabulation of this Group (Trans. Roy. Soc., S.A., 1908, p. 384) this species will stand next to *H. brevicollis*, Blackb., from which it may be separated thus:—

E. Hind angles of prothorax obtuse ... *brevicollis*, Blackb.
 EE. Hind angles of prothorax sharply
 right angles *coxalis*, Blackb.

N.B.—The type of *H. coxalis* is perhaps abraded, but the species is certainly one with very little if any pubescence.

New South Wales; Gosford (Mr. Lea).

H. costulatus, Blackb. Sat elongatus, postice leviter dilatatus; nitidus; ferrugineus; sat glaber, pronoto pilis erectis sat elongatis antice fimbriato, nonnullis in capite elytrisque dispersis; clypeo grosse sat crebre ruguloso, antice subtruncato; labro clypei planum haud attingenti; fronte grosse nec crebre nec rugulose punctulata; fronte clypeoque ut plana sat disparia visis; antennis 8-articulatis; prothorace quam longiori duplo latiori, antice parum angustato, supra sparsim fortiter subacervatim punctulato (puncturis circiter 12 in segmenti longitudine), lateribus (superne visis) leviter arcuatis, angulis anticis sat acutis modice productis posticis (superne visis) obtusis, basi vix sinuata, margine basali sat æquali; elytris costulis circiter 5 (sutura inclusa, 5^a subobsoleta) crnatis, fortiter subseriatim minus crebre punctulatis (trans elytron puncturis circiter 18); pygidio subtilius minus crebre punctulato; coxis posticis quam metasternum sat brevioribus quam segmentum ventrale 2^{um} sat longioribus; tibiis anticis extus tridentatis; tarsorum posticorum articulo basali quam 2^{us} paullo breviori, 3^o sat æquali; unguiculis appendiculatis. Long., 3 l.; lat., 1 $\frac{2}{3}$ l.

In the tabulation (Trans. Roy. Soc., S.A., 1908, p. 384) this species must stand beside *spretus*, Blackb., from which it differs by, *inter alia plurima*, the (well defined) costæ on its elytra.

Western Australia; Mount Barker (Mr. Lea).

GROUP III.

H. aspericollis, Blackb. This species was accidentally omitted when Group III. was revised by me in Trans. Roy. Soc., S.A., 1909. In my former Revision of *Heteronyx* the species was placed in Group VI. (corresponding in general to Group VII. of the present memoir), but cannot stand in Group VII. as now characterized, on account of the middle lobe of the trilobed outline of the head not being convex, but of the same peculiar form as that of the species which I believe to be *H. granum*, Burm., *i.e.*, bisinuate with its ends angular. In the tabulation of Group III. (*loc. cit.*, pp. 21-24) *aspericollis* must stand beside *granum* from which it differs by, *inter alia*, the dark flabellum of its antennæ and the hind coxæ longer than the 2nd ventral segment. It also differs in colouring. I have before me a fairly numerous series of both species, and find that while the pronotum of *granum* is invariably testaceous-red in colour, that of *aspericollis* is invariably black, although its elytra vary in colour from red to black with an intermediate form having the suture (only) black.

H. granum, Burm. It seems desirable to call attention here to the note in my former Revision on the difficulty of identifying this species (Proc. Linn. Soc., N.S.W., 1889, p. 1235). As Burmeister did not describe the claws of *H. granum* confident identification is impossible. The species to which I have assigned the name is variable in colour, the elytra being much darker in some specimens than in others. It is found in Victoria as well as in South Australia.

H. alienus, Blackb. This species was accidentally overlooked when Group III. was revised in Trans. Roy. Soc., S.A., 1909. Its proper place in the tabulation is in the aggregate GG on page 24, line 4. It differs from both the other species in that aggregate by its clypeus very distinctly emarginate in front—as in *H. æqualiceps*, Blackb.—(very much less strongly than in *H. obesus*, Burm.), by its much smaller size, its pronotum and elytra much more coarsely and less closely punctured, etc., etc. In the tabulation it should follow *H. Callabonna*, Blackb., thus:—

HHH. Clypeus very conspicuously emarginate in front alienus, Blackb.

GROUP IV.

H. ruficollis, Macl. This species should be placed here. I have recently examined the unique type (in the Australian Museum, Sydney) which, unfortunately, is in very bad condition, appearing to have been broken and subsequently reconstructed with gum. There are, however, some unnamed specimens in the Macleay Museum, from Cairns, which seem to be identical. Assuming their identity, the species falls in Group IV. (Subgroup II.) of the present Memoir, where it stands in the tabulation beside *H. additus*, Blackb., differing from that species by, *inter alia*, its very much smaller size, clypeus not projecting laterally beyond the outline of the eyes, and lateral sulcus of the pronotum not dilated in its front part. *H. ruficollis* is extremely variable in colouring of elytra from the "black" of the type to testaceous, with intermediate forms in which the elytra are black with a wide discoidal red vitta, the vitta in some examples being abbreviated so as to be a mere red blotch on the middle of the base.

H. grandis, Blackb. In the tabulation of the 2nd subgroup of Group IV. (Trans. Roy. Soc., S.A., 1909, pp. 44, etc.) this species might perhaps be more satisfactorily placed by transposing the lines (on p. 44) D and E, EE, so that E and EE would become D and DD, and would immediately follow C, the line now standing as D becoming E, and following next after the line now called EE. That change would involve the alteration of the lettering on p. 47 by DD becoming EE, and the next six lines becoming F, G, GG, H, HH, FF. The change would be for the purpose of avoiding the statement that the frons of *H. grandis* is not perpendicularly declivious—a statement that cannot be made correctly without qualification, inasmuch as the frons is perpendicular for a certain distance on either side part of its front margin and rarely is slightly so even in the middle. I have recently taken (in the original locality) a small *Heteronyx* (long., $4\frac{1}{2}$ l.) which, I have no doubt, is a dwarf of *H. grandis*, and its frons certainly proves that it is possible for the declivity to be quite traceable all across the front.

H. cornutus, sp. nov. Modice elongatus, postice sat dilatatus; sat nitidus; ferrugineus; supra pilis adpressis minus brevis minus crebre vestitus; clypeo crebre nec grosse ruguloso, antice ut lamina sat alta erecta angusta reflexo, in anteriorem partem oculos fortiter superanti; labro clypei planum nullo modo attingenti; fronte sat grosse rugulosa; hac clypeoque ut plana disparia visis; antennis 9-articulatis; prothorace quam longiori ut 5 ad

3 latiori, antice modice angustato, supra minus crebre sat grosse punctulato (puncturis circiter 12 in segmenti longitudine), lateribus (superne visis) sat rotundatis, angulis anticis minus acutis minus productis posticis (superne visis) sat rotundatis, basi haud sinuata, margine basali subtili æquali; elytris minus crebre sat grosse punctulatis (trans elytron puncturis circiter 16); pygidio sparsius minus fortiter punctulato: coxis posticis quam metasternum manifeste brevioribus, quam segmentum ventrale 2^{um} sat longioribus; tarsis brevibus, posticorum articulo basali quam 2^{us} paullo breviori 3^o sat æquali; unguiculis posticis appendiculatis, vix subbifidis, parte basali quam apicalis multo longiori. Long., 2 $\frac{1}{4}$ l.; lat., 1 $\frac{1}{8}$ l.

This and the following two species display a character which distinguishes them sharply from all the rest of the known Australian *Heteronyces*, in the clypeus being raised in front into an erect narrow lamina, the height of which is equal to about half the distance from its base to the clypeal suture. The claws of all three are appendiculate, but more or less (least in this species) of the subbifid type discussed under the heading of Group IV. (Trans. Roy. Soc., S.A., 1909, p. 39). They belong to the 2nd subgroup of Group IV., and their place in the tabulation of that subgroup is indicated under the heading of *H. pedarius*, Blackb. The punctures of the dorsal surface in this species are not numerous, but owing to their large size they are tolerably close to one another.

North-Western Australia (given to me by Mr. French).

H. capitalis, sp. nov. Modice elongatus, postice leviter dilatatus; sat nitidus; dilute ferrugineus; supra pilis adpressis minus brevibus minus crebre vestitus, capillis erectis sat elongatis nonnullis in capite et in pronoti parte antica dispersis; clypeo (hoc antice ut lamina sat alta erecta minus angusta reflexo, in exteriorem partem oculos haud superanti) fronteque crebre nec grosse rugulosis, ut plana disparia visis; labro clypei planum nullo modo attingenti; antennis 9-articulatis; prothorace quam longiori ut 5 ad 3 latiori, antice modice angustato, supra crebre subtiliter punctulato (puncturis circiter 25 in segmenti longitudine), lateribus (superne visis) sat rotundatis, angulis anticis sat acutis modice productis posticis (superne visis) rotundatis, basi vix bisinuata, margine basali subtili sat æquali; elytris crebre subtiliter nec aspere punctulatis (trans elytron puncturis circiter 33): pygidio coriaceo sparsissime subobsolete punctulato; coxis posticis metasterno longitudine sat æqualibus, quam segmentum ventrale 2^{um} multo longioribus; tibiis anticis

extus bidentatis; tarsi sat brevibus, posteriorum articulo basali quam 2^{us} sat breviori 2^o sat æquali: unguiculis posticis appendiculatis sed subbifidis, parte basali quam apicalis paullo longiori. Long., $3\frac{2}{3}$ l.: lat., $1\frac{3}{8}$ l.

Some remarks on the characters of this species will be found under the preceding (*H. cornutus*). It differs from *H. cornutus* by larger size, the very dissimilar puncturation of its dorsal surface, its clypeus not passing the outline of the eye laterally, its front tibiæ with only two external teeth, the apical piece of its hind claws notably longer, etc. The shape of the pseudo-horn of its clypeus is fan-shaped, being (when viewed obliquely along the head from behind) much narrower at the base than the apex, which has a convex outline, the pseudo-horn of *cornutus* having sides almost parallel and apex subtruncate.

North Queensland (Mr. Perkins).

H. pedarius, sp. nov. Sat elongatus, postice parum dilatatus; minus nitidus; dilute ferrugineus; supra pilis adpressis minus brevibus crebrius vestitus, capillis erectis sat elongatis nonnullis in capite et in pronoti parte antica dispersis; clypeo (hoc antice ut lamina sat alta erecta minus angusta reflexo, in exteriorem partem oculos haud superanti) fronteque crebre nonnihil subgrosse rugulosis, ut plana minus disparia visis; labro clypei planum nullo modo attingenti; antennis 9-articulatis; prothorace quam longiori ut 7 ad 4 latiori, antice minus angustato, supra crebre sat subtiliter punctulato (puncturis circiter 25 in segmenti longitudine, lateribus (superne visis) sat fortiter rotundatis, latitudine majori ad mediam partem sita, angulis anticis sat acutis modice productis posticis (superne visis) sat rotundatis, basi perparum bisinuata, margine basali subtili sat æquali; elytris crebre subtiliter sat aspere punctulatis (trans elytron puncturis circiter 35): pygidio leviter sparsissime punctulato; coxis posticis metasterno longitudine sat æqualibus, quam segmentum ventrale 2^{um} multo longioribus; tibiis anticis extus bidentatis (dente superiori subobsoleto): tarsi minus brevibus, intermediorum articulo basali quam 2^{us} 3^{us} que conjunctis vix breviori, posteriorum articulo basali 2^o sat æquali quam 3^{us} sat longiori; unguiculis posticis appendiculatis sed nonnihil subbifidis, parte basali quam apicalis sat longiori. Long., $3\frac{1}{2}$ l.: lat., $1\frac{2}{3}$ l.

The unusual length of the basal joint of the intermediate tarsi renders this species very distinct from the two others having the clypeus laminated, and its laminated clypeus distinguishes it from all the rest of the genus. It is nearly

allied to *H. capitalis*, from which it differs by, *inter alia*, its prothorax widest at the middle, its elytral puncturation asperate, etc. It, and the preceding two species, in the tabulation (Trans. Roy. Soc., S.A., 1909, p. 48) follow *pygidialis*, thus:—

BBB. Clypeus raised into a narrow erect lamina in front.

C. Clypeal lamina with parallel sides; puncturation coarse and sparse ... *cornutus*, Blackb.

CC. Clypeal lamina more or less fan-shaped; puncturation fine and close.

D. Basal 2 joints of intermediate tarsi subequal *capitalis*, Blackb.

DD. Basal joint of intermediate tarsi very much longer than 2nd joint *pedarius*, Blackb.

North-Western Australia (Mr. Masters).

The number of names under which species have been described as *Heteronyces*, or which there is reason to attribute to the genus, although differently placed by their authors, is, I think, 328, including the new species described in this present Memoir. Of these names 293 will be found in the tabulations above (161 as previously described species, 131 as new species). The 35 names omitted from tabulation are accounted for as follows:—

Synonyms (10), *viz.*:—

australis (*Cotidia*), Boisd. (*nom. præocc.*) = *fallax*, Blackb.

breviceps, Blackb. = *rufopiceus*, Macl.

fissiceps, Blackb. = *chlorotica*, Gyll.

hepaticus, Er. = *fumatus*, Er. (*vide* Trans. Roy. Soc., S.A., 1901, p. 22).

obscurus, Le Guill. = *nigellus*, Er.

pubescens, Macl. = *Erichsoni*, Blackb.

rapax, Blackb. = *fumatus*, Er.

Cowelli, Blackb. = *concolor*, Macl.

submetallicus, Blackb. = *Lindi*, Blackb.

subvittatus, Macl. = *subfuscus*, Macl.

Subsequently made the type of a new genus (1), *viz.*:—
baldiensis, Blackb. (*Pseudoheteronyx*).

Species unknown to me, and not sufficiently described for confident identification (21). It seems desirable to furnish notes on these separately. They are:—

rotundiceps, Blanch. (already discussed under Group I.).

Spadiceus, Burm. (already discussed under Groups I. and VI.).

- unguiculatus*, Burm. (already discussed under Group I.).
- pilosellus*, Blanch. (already discussed under Groups III. and IV.).
- laticeps*, Burm. (already discussed under Groups III. and IV.).
- australis*, Guér. (already discussed under Groups IV. and VIII.).
- planatus*, Burm. (already discussed under Group IV.).
- unicolor*, Blanch. (already discussed under Group VI.).
- pellucidus*, Burm. (already discussed under Group VII.).
- Carpentaria* (*Schizonycha*), W. S. Macleay, Dej. Cat. Quoted by Gemminger and Harold as a synonym of *præcox*, Er., which, judged by the name, seems most improbable. The description given by Boisduval consists of five words.
- cervinus* (*Sericesthis*), Boisd. In Trans. Roy. Soc., S.A., 1907, p. 245, I mentioned having inspected a *Heteronyx* in the Macleay Museum which seemed to be a cotype of this species. At a later date I could not find the specimen.
- holomelænus*, Blanch. A member of Group VII. or VIII., according as its claws are bifid or appendiculate. It is described as entirely black and of fairly large size (10 m.). I do not know any such species in either Group.
- laticollis*, Blanch. Group VII. or VIII. (its claw structure not recorded). I should judge it, from the description, to belong to Group VIII., aggregate AA, B, C, D, E, in which it might be almost any of the species that I have placed there were it not that the prothorax is said to be wider than the elytra, which is not the case in any species known to me of the aggregate.
- nigrinus*, Blanch. Group VII. or VIII. (its claw structure not recorded). It might be the species which I described as *H. nigrinus* were it not for the words "*elytris fere planis*" in the description. The locality is given as "Eastern Australia"; *nigrinus* is from Adelaide.
- oblongus*, Blanch. Group VII. or VIII. (its claw structure not recorded). The description fits many species in either group, and contains no

information by which the insect could be identified.

obscurus (Hombr. et Jacq.), Blanch. Group VII. or VIII. (its claw structure not recorded). Described as of moderate size (9 m.) and black colour, from the Northern Territory. I do not know any black species, of either group, from that region.

ovatus, Blanch. Group VII. or VIII. (its claw structure not recorded). The description mentions no really salient character, and fits more or less closely many species in either group.

pilosus (Hombr. et Jacq.), Blanch. Group VII. or VIII. (its claw structure not recorded). Habitat not recorded by Blanchard, but assigned in Masters' Catalogue to the Northern Territory. The description is not precise enough for identification with any *Heteronyx*.

proximus, Burm. Group VII. or VIII. (its claw structure not recorded). I do not think it would be possible to identify this insect by means of the description.

rufomarginatus, Blanch. Group VII. or VIII. (its claw structure not recorded). The description of this species does not fit any *Heteronyx* known to me.

rubriceps, Blanch. Group VII. or VIII. (its claw structure not recorded). Probably the type is immature or a variety. The description suggests a species of Group VIII., aggregate AA, B, C, D, E, but the description does not supply information that identifies it with any species of that aggregate.

The following species stand in this Revision of *Heteronyx* in different Groups from those in which they were placed in my former Revision. For my former Revision Sir W. Macleay was good enough to send me for inspection alleged specimens of many of the species that he described, and I treated them as types. Subsequent study in Sydney of the Macleay collections has, however, shown that it is not unusual for more than one species to stand in those collections under one name, and in some instances the specimen sent by Sir W. Macleay seems to have been the wrong one, and that circumstance accounts for some of the entries in the following list. One of the entries

arises from a mistake on my own part (*H. insignis*, Blackb.), the others from slight changes in the terms used for definition of certain characters (chiefly those of the claws):—

- H. rufopiceus*, Macl., transferred from Group I. to III.
- H. insignis*, Blackb., transferred from Group II. to IV.
- H. holosericeus*, Macl., transferred from Group III. to IV.
- H. badius*, Macl., transferred from Group I. to VIII.
- H. concolor*, Macl.
- H. simulator*, Blackb., transferred from Group III. to IV.
- H. Cowelli*, Blackb., already discussed under Group VII.
- H. siccus*, Blackb., already discussed under Group VII.
- H. sydneyanus*, Blackb., transferred from Group VIII. to IV.

It should be borne in mind that in the first paper of my former Revision (Proc. Linn. Soc., N.S.W., 1888, pp. 1321, etc.) the aggregates that I subsequently called Groups I.-IV. were not divided into Groups, but included in one tabulation; also, that the aggregate which I then called "2nd section (Intermediate)" has now been cancelled, its species being distributed among the aggregates now named Groups.

The following three species are not included in the tabulations, as they require further study at Sydney before I can deal with them:—*H. marginatus*, Blackb.; *scutatus*, Macl.; *nigricans* (? Burm.), Blackb.
